PHILOSOPHY

THE JOURNAL OF THE ROYAL INSTITUTE OF PHILOSOPHY

VOL. XXVI. No. 99 OCTOBER 1951

COMTE'S POSITIVISM AND THE SCIENCE OF SOCIETY [1]

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I

POSITIVISM is the view that the only way to obtain knowledge of the world is by means of sense perception and introspection and the methods of the empirical sciences. Positivists believe that it is futile to attempt to deduce or demonstrate truths about the world from alleged self-evident premisses that are not based primarily on sense perception. They consider, on the contrary, that knowledge of things can only be advanced by framing hypotheses, testing them by observation and experiment, and reshaping them in the light of what these reveal. Thus they regard metaphysics, in so far as it is the effort to find out about the world by methods other than those employed in the empirical sciences, as a hopelessly misdirected activity. The method of hypothesis, they hold, is applicable to any field of factual enquiry, although they admit that differences of subject-matter may call for very considerable variations of emphasis. Such variations, however, important though they be, are, on their view, matters of detail, and do not detract from the essential sameness of the effective method. This method was first consciously analysed by reference to the sciences of nature, where its use has led to impressive results both in the theoretical and practical sphere. Human beings, however, have tended, once they came to think about such matters at all, to regard themselves as not altogether parts of nature, and have hesitated to believe that the method so successfully applied to

[1] Based on a public lecture given in the University of Chicago in August, 1949. I hope I have profited from discussion both at and after the lecture.

planets, particles and plants, could be or should be applied to men and their societies. Contemporary positivists, however, hold that it is so applicable, and point to the social sciences in support of their view. Indeed, in contemporary speech, the transfer of social and moral problems to social science is almost as important a mark of positivism as is its rejection of metaphysical speculation. In the eighteenth century, Hume had adduced very plausible grounds for the possibility of applying the ordinary scientific methods to the moral world, and Comte, in the first part of the nineteenth, endeavoured to sketch the outline of such a science, which he called first "social physics," and then "sociology."[1] It may not be altogether unprofitable, at a time when so much is hoped for from the social sciences, to consider critically some of Comte's main contentions and some of the ideas which gave rise to them.

It will be best to begin with the Law of the Three Stages. In 1822, in his first sketch of the Positive Philosophy (*Plan of the Scientific Researches necessary for the Reorganization of Society*), he argued that "because of the very nature of the human mind" all human knowledge passes through "the theological or fictive stage; the metaphysical or abstract stage; and finally the scientific or positive stage." In the theological stage "ideas of the supernatural" operate as explanatory concepts, and "the observed facts are *explained*, that is, are looked at *a priori*, in terms of invented facts." The metaphysical stage is an intermediate style of thinking which operates "in terms of ideas which are no longer altogether supernatural and are not yet altogether natural. Briefly, these ideas are personified abstractions in which the mind can decide to see, either the mystical name of some supernatural cause or the abstract statement of a simple series of phenomena, according as it is nearer to the theological or to the scientific stage." The positive stage, according to Comte, "is the final mode to be assumed by any science; the two first being destined only to prepare the way gradually for it. In this stage facts are linked in terms of ideas or general laws of an entirely positive order suggested or confirmed by the facts themselves; . . . The attempt is constantly made to reduce them to as small a number as possible, but without introducing any hypothesis which could not some day be verified by observation, and without regarding them as anything but a means of expressing phenomena in general terms."[2]

It seems to me that the Law of the Three Stages is, in the first

[1] Comte at one time "regretted the hybrid character" of this word, but later wrote: "but there is a compensation, as I reflected afterwards, for this etymological defect, in the fact that it recalls the two historical sources—the one intellectual, the other social—from which modern civilization has sprung." *System of Positive Polity* (1851), vol. I, p. 326 (translated by J. H. Bridges).

[2] Plan des Travaux Scientifiques Nécessaires pour réorganiser la Société (*Opuscules de Philosophie Sociale*, Paris, 1883, pp. 100–101).

place, a formulation of a theory of knowledge. In this aspect, examination of it is a matter for philosophy. In the second place, it is used by Comte to interpret the history of science and of Western society. In this respect it is an alleged sociological law. In the third place, as is suggested by the reference to "the reorganization of society" in the title of the essay in which it was first formulated, Comte regarded it as providing the foundation for social reform. In this respect its prime importance is moral. I will now make some comments under each of these heads.

II

First, then, as to the theory of knowledge involved. It will be noticed that to explain facts by reference to supernatural beings is, according to Comte, to explain them *a priori* and "in terms of invented facts." Thus he is saying that the supernatural is a human invention. It will also be noticed that the metaphysical stage of explanation is intermediate, introducing no new principle of explanation, but oscillating between the invented and the positive ones. In so far as it is distinguishable, however, there is still explanation in terms of something behind phenomena, but it is not a god but a "personified abstraction." At the positive stage there are no invented gods nor personified abstractions; the conceptions used refer to phenomena, and phenomena only. Theories are suggested and framed in terms of phenomena, and accepted or rejected as phenomena provide verification or falsification. The concept of law replaces that of cause, and any beings not to be found among phenomena are "supernatural" and therefore "invented."

Ideas can only be stigmatized as "invented," however, in terms of something that is discovered, and declensions from positive knowledge can only be defined in terms of positive knowledge itself. What, then, according to Comte, are the marks of positive knowledge?

At this point we may refer briefly to Hume's theory that our knowledge is confined to "impressions" (i.e. sensations and feelings) and to "ideas," which are "faint copies" of impressions. It follows from this that to talk of what *causes* impressions themselves is to talk idly, because the only ideas we can have must be based on impressions. This view was transmitted to John Stuart Mill, according to whom physical objects are "permanent possibilities of sensation," and natural laws regularities in the co-existence and sequence of experiences. Thus, on the view of the English empiricist tradition, there is no knowledge of any cause or basis of experience; when we think we have such knowledge we are manipulating ideas which in fact must be derived from experience. If, on manipulating these

ideas we were led to expect impressions of supernatural beings, and then these expectations were fulfilled, the ideas would not be mere inventions. But in fact they do not lead us to new impressions in this way, and so they have no cognitive value. The cognitive value of scientific theories resides in their being verified by the occurrence of expected sensations.

Comte's view is both like and unlike.[1] He writes: "any proposition which is not strictly reducible to the simple statement of a fact, whether particular or general, cannot offer any real or intelligible meaning."[2] By a fact, however, he does not, as I understand him, mean an actual or possible sensation, or series of such, as would be meant in the Hume-Mill tradition. In this respect he thinks in terms of the common sense realism of the French Enlightenment rather than of the subjectivism of the English empiricists. It may be of interest at this point if I give an outline of the attempts of some of the philosophers of the French Enlightenment to lay the spectre of subjectivism which, as they saw, haunts empiricist theories of knowledge.

In 1749, in his *Letter on the Blind*, Diderot, referring to Berkeley, said that idealism was a "system which, to the shame of the human mind and philosophy, is the most difficult to combat, although the most absurd system of all."[3] This was intended as a challenge to Condillac to refute it, a challenge which Condillac took up in his *Treatise on the Sensations* (1754). Condillac's "answer" consisted in saying that there would have been no conception of an external world apart from the sense of touch, and that the sense of touch gave the notion of an external world through the difference between the double sensation of touch when a hand touches another part of its body, and the single sensation of touch when the hand touches something that is not a part of its body. "Touch," he held, "teaches the other senses to judge of natural objects."[4] This type of argument, of course, can provide no answer to Berkeley, but appears to have satisfied for a time some of the leading French philosophers. It was repeated, for example, by d'Alembert in his *Essay on the Elements of Philosophy* (written for Frederick the Great in 1759). D'Alembert also distinguished, however, between the *genesis* of belief in an external world, and *proof* of the existence of an external world. He held that the argument from touch shows how the belief arises, but that the grounds for belief in an external world are only probable,

[1] He refers to "le sage Hume" on a matter of history, and calls him "le judicieux Hume" in connection with his account of causality.

[2] *Discours sur l'Esprit Positif*, § 12.

[3] Diderot, *Oeuvres* (Ed. J. Assézat), I, pp. 304–305.

[4] *Traité des Sensations*, 1754 edition, title to Part III. The matter is discussed by M. Le Roy in his edition of Condillac's philosophical works (1947).

consisting in the coherence of our waking life and the relative incoherence of our dreams and imaginations. It is worth noticing that in the chapter in which this topic is discussed d'Alembert distinguishes between speculative metaphysics, "an empty and contentious science," and the metaphysics which shows how our ideas arise from our sensations. The latter sort, he holds, propounds truths the germs of which everyone possesses. "It appears that all we learn in the good book of metaphysics is a sort of reminiscence of what our mind has already known." Thus it can be said about good metaphysical works "that no one, in reading them, fails to think that he could have said as much."[1] In 1750 Turgot, in his *Letters to the Abbé . . . on Berkeley's System*, was confident that he had refuted Berkeley.[2] But in his brilliant article entitled "Existence" in the *Encyclopedia*, he showed a better appreciation of Berkeley's drift, and appears as an extremely subtle phenomenalist. For the most part, however, the French philosophers of this period felt in their bones that subjectivism is absurd, and accepted the authority of what d'Alembert, in his *Preliminary Discourse on the Encyclopedia*, had called "a sort of instinct."

Because of his system of "cerebral hygiene," which consisted in refraining from reading books and newspapers in order that his mind could work freely and consistently,[3] Comte's later reading was rather patchy. But at l'École Polytéchnique where he studied until he was expelled as the ringleader of a student revolt, the ideas of the Enlightenment were carried on into the Restoration, and these provided Comte with the framework of his system.[4] When Comte writes: "the genuine philosophical spirit consists primarily in systematically extending simple good sense ('bon sens') into all truly accessible speculations"[5] he is continuing the practical realist tradition that I have just referred to. His use of the word is well illustrated by the title of an anonymously published work by the Baron d'Holbach: *Good sense, or natural ideas opposed to supernatural ideas*.[6] Comte has no fear that, in holding genuine knowledge

[1] *Oeuvres Philosophiques* (Ed. 1805), II, pp. 125–126.

[2] *Oeuvres* (1808), III, pp. 138–154.

[3] In a letter to Harriet Martineau (*Auguste Comte*, Littré, 1877, p. 642), Comte said this made him "insensible to the blows of an incompetent press."

[4] H. Gouhier, *La Vie d'Auguste Comte* (Paris, 1931), and *La Jeunesse d'Auguste Comte*, Vol. I (Paris, 1933).

[5] *Discours sur l'Esprit Positif*, § 34.

[6] *Le Bon sens, ou idées naturelles opposées aux idées surnaturelles*. I quote from the London edition of 1774. The first edition was published at Amsterdam in 1772. It is not only the title of this book that appears to anticipate Comte's theories. In the Preface d'Holbach refers to "good sense" as "that portion of Judgment which suffices for the knowledge of the simplest truths, the rejection of the most striking absurdities. . ." (p. 1). Anyone who carefully consults

to be of phenomena and their laws, there is any danger of subjectivism and idealism. All he means is that we are justified in regarding as knowledge of the world only what can stand the test of observation and experiment, "observation" and "experiment" being understood in the ordinary senses of these words, not in the subtle senses according to which they are both analysed into the sensing of sense data.

This can be brought out quite clearly if we turn to § 10 of the *Discourse on the Positive Spirit* where he writes: "If popular good sense had not long ago pushed aside the absurd metaphysical doubts raised twenty centuries ago as to so fundamental a notion as the existence of external bodies, we may be sure that they would still survive in one shape or another; for they have certainly never been decisively dissipated by any argumentation." At the end of the *Positive Philosophy* he writes as follows: ". . . the true nature of positive speculation has frequently led us to verify, in all regions, the fundamental happy agreement between healthy philosophical contemplation and the spontaneous advance of the public reason. The theologico-metaphysical regime, regarding the human mind as the source of universal explanations, has deeply imprinted on our habits of speculation an ideal character of chimerical elevation, radically isolating them from the modest attractions of popular wisdom . . . while the common reason was satisfied to grasp, in the course of judicious observation of diverse occurrences, certain natural relations capable of guiding the most indispensable practical predictions, philosophical ambition, disdaining such successes, was hoping to obtain the solution of the most impenetrable mysteries by means of a supernatural light. But, on the contrary, a healthy philosophy, substituting everywhere the search after effective laws for the search after essential causes, intimately combines its highest

good sense in the study of religious opinions "will easily see that these opinions have no solid foundations; that every religion is an edifice in the air; that Theology is only ignorance of natural causes reduced to system." D'Holbach goes on to argue that at the beginning of history ferocious and warlike men imagined in their own image a God of Battles, served by priests who used religion to keep men subject to tyrants (p. vii). Instead of concerning themselves "with the natural and visible causes of their unhappiness," men were "fascinated by religious notions or metaphysical fictions" (p. viii). All men, according to d'Holbach, have an interest in the truth, but such science as priests developed in early times they kept from the general run of men, or only imparted to them in allegories (p. 290). The general interest would be served if priests ceased discussing useless subtleties and helped on the advance of science (pp. 274–275). Apart from the notion of a good sense concerned with what is testable and useful, we can see in this book adumbrations of the Law of the Three Stages; theologians and metaphysicians are classed together and contrasted with "philosophers"; and the theological era is regarded as militaristic, and science as inclined towards peace.

speculations with the most simple popular notions, so as finally to build up . . . a profound mental identity, which no longer allows the contemplative class to remain in its habitual proud isolation from the active mass (de la masse active—the *acting* masses). . . . The whole of this Treatise conspires to show that the true philosophical spirit consists in this one thing, in a simple extension of the popular good sense (du bon sens vulgaire) to all subjects accessible to the human reason . . ." In the same passage Comte refers to positive science as "the continuous work of the whole of humanity, without any special inventor," and says that "quite apart from its point of departure, the public reason ought to establish the general aim of positive speculations, always ultimately directed towards predictions relating to universal needs."[1]

We can see from these passages that Comte is not stating a phenomenalist theory of knowledge of the Hume–Mill type. Rather he is asserting that the essential feature of natural science is its practical efficacy. The prime reason why the theological and metaphysical modes of thought are rejected is that they do not link with good sense and practice in the way that the positive mode does. At this point the epistemology of Comte's system merges into sociology *via* his emphasis on the criteria of social agreement and practical success. We now, therefore, pass to the second aspect of the Law of the Three Stages, viz. its status as a sociological law.

III

Comte himself regarded the Encyclopedists as representatives of the metaphysical mode of thinking. Any value their views possessed was due, he held, to their criticisms of the theological mode of thought. Such notions as that of natural law, or natural religion, or a social contract, had no factual content in spite of their destructiveness in the social conflicts of the period. The success of Diderot, he believed, was practical only, and consisted in providing "an artificial rallying point for the most divergent efforts" and in securing "for these incoherent speculations the external appearance of a sort of philosophical system." Comte's judgment, I suggest, is here at fault. The *Encyclopedia* was much more than an incoherent collection of metaphysical attacks on theological notions and feudal institutions. As M. René Hubert[2] has shown, although there is no single point of

[1] *Cours de Philosophie Positive*, Vol. VI (Paris, 1842), pp. 705–710. The anticipation of Marxism is striking. Comte stresses the union of theory and practice, the special virtue of the proletariat, and the affinity between intellectuals and the working classes.

[2] *Les Sciences Sociales dans l'Encyclopédie* (Paris, 1923).

view exclusively represented in it, the *Encyclopedia* concentrated much of the best knowledge of the time. Running through it may be seen the conception of a single fairly continuous development of human civilization from Ancient Egypt to the eighteenth century, and of human society as a natural growth, made possible by a basic sociability, and stimulated by natural needs. Although there were no deliberate affronts to religious orthodoxy, the *Encyclopedia* contained various attempts to describe the natural origins of religion. That no single theory was fancied, but that alongside the theory of a natural religion associated with natural law there were references to fear, to Euhemerism, and to social utility, is, perhaps, a merit in the work rather than a defect.

It is clear, therefore, that Comte cannot be regarded as the first to apply the positive method to the study of human society. However that may be, his main contribution, apart from his analysis of the methods of sociology, is his Law of the Three Stages considered in its sociological sense. One of Comte's sociological contentions is that *in fact* human thought has progressed through the stages of theoretical advance set out in his epistemological theory. He thought this could be shown in the history of each of the main sciences from mathematics to sociology itself. This is the most influential of his suggestions, and it has been a guiding hypothesis in the work of such historians of science as Abel Rey in France, and Lynn Thorndike in the U.S.A., even though they do not make things work out quite as neatly as Comte does.

The positive method, however, claims to be predictive. Now although in their earlier stages mathematics and the natural sciences contained theological notions which have, on the face of it, been subsequently abandoned, this, I suggest, provides no sure ground for believing that the positive stage is the final stage and that theological conceptions will never be introduced again.

It may be suggested in the first place that the use of the positive method in the field of psychical research shows at any rate the possibility of theological or quasi-theological conclusions being reinstated by use of the very method that was to have annihilated them. Let us suppose, for the sake of clarity, that it has been established that such things as telekinesis take place, and that laws have been formulated linking them with psychological conditions of living people. Then clearly this would be a case of positive knowledge; we should know more about nature than we had known hitherto, and what had seemed supernatural would be shown to be merely extraordinary. If, however, it was found impossible to link telekinesis either with physical or psychological conditions of living people, and if its occurrence, along perhaps with other phenomena, seemed to point unmistakably to the existence of human personalities that

have survived bodily death, what then? One does not want to speculate in the void, but it appears that if there were reasonably good experimental evidence for human survival, it would have to be social in nature; that is, it would have to appear that disembodied or curiously embodied minds or wills were taking some part in human affairs. If such a stage were ever reached, then psychical research would have become a part of *social* science, and would have such possibilities of development as comported with the theoretical and moral level of the persons being investigated. Experiment and prediction would be easier, the lower the level of the alleged communicating beings, as is the case in ordinary human affairs. Psychical research, therefore, if it developed in this way, would be a rather unexpected part of what Comte called "social physics" or "sociology," and would not be "theological" in his pejorative sense of the word.

It should be noted, in the second place, that if it be granted that the positive stage is the ultimate conceivable stage of human knowledge, it does not follow that, once achieved, it will continue to be developed. For its continuance would depend upon social factors which might or might not be realized. A physicist might predict, for example, that in the course of the next twenty years a certain series of problems, some items of which have already been settled, will be successfully disposed of. What this amounts to is that men have solved similar problems, are continually working on them with the methods and energy that have been successful in the past, and will therefore probably complete their programme. But the assumption is being made that the problems will continue to seem worth while, and that the social organization for dealing with them will not break down. So with the continuance of the positive method. We could only be sure of its continuance if we had independent evidence that the social conditions of its continuance would be maintained. (Comte himself, of course, believed that the positive method was associated with a form of society—industrial society—that would perpetuate both the method and the society. His confidence here was based on the view—now alas long exploded—that industrial society is fundamentally peaceable.)

We have suggested, then, that predictions might be made about the future of human knowledge to the extent that we may have grounds for believing that certain types of problem we are already aware of will be solved if there is no great change in the organization or interests of society. We may therefore agree with Comte that, once positive knowledge has become widespread, and organizations for its development are securely in being, it is likely to continue under its own impetus, and to diminish the confidence men have in theological thinking. Can we have any confidence, however, in its

being the *final* stage of human knowledge? If we ignore the possibility of relapses from it, have we reasonable grounds for supposing that no further advance is possible? Comte's grounds for this, it seems to me, are not sociological, but epistemological. That is, his confidence that the positive stage is the ultimate stage is not really based on evidence from the history and structure of human society, but upon his view that no improvement on positive knowledge is *conceivable*. What looks like a social prediction is really a logical assertion. Comte's "law," then, would fail if his epistemology proved untenable.

We may, in the fourth place, then, consider whether it would be senseless to talk of the possibility of what, in Comte's language would be a Fourth Stage of human knowledge, and could be more generally described as a post-positive stage of it.[1] In very general language we may say that it is conceivable that there might be a form of knowledge related to positive knowledge in some such way as that was related to theological knowledge. There is nothing outrageous about this, as far as I can see. But it would not, of course, amount to much unless we had an *example* of such knowledge in terms of which positive knowledge might be judged. But such an example could only be available if positive knowledge had, to some extent, been already transcended. This situation exists also in the aesthetic field, where we know that we judge works of art by standards that differ in a number of ways from those of our grandfathers, and feel pretty sure that the standards of our grandchildren will differ from ours, even though we do not know in what respects they will differ. One thing that happens in such cases is that an artist or a poet produces a work which compels such admiration that other artists or poets try to develop the aesthetic possibilities revealed by it, and critics henceforth have it, or its type, in mind when they assess new productions. A new work of art may thus amplify or modify aesthetic standards, but until the work has been produced we cannot know how it will do so. I do not suggest that scientific standards are built up in just the same way as aesthetic standards are, nor that they change as rapidly or as radically, but I do suggest that continuing scientific effort produces theories and even outlooks which get incorporated into that highly complex system of ideas which is the standard by which particular scientific achievements are judged. If this be so, then the notion of a sole or final standard of scientific judgment is misleading. The positivist is justified in using the existing standard, in so far as it is more coherent and comprehensive, as a measure of past scientific achievements, but he is not

[1] Comte himself regarded a post-positive stage of knowledge as an "utopie trop extravagante pour mériter la moindre discussion." *Cours de Philosophie Positive*, IV (1839), p. 174.

justified in regarding it as more than a very precarious clue to what the scientific standards of the future will be. I would remark in passing that just as the merit of positivism is its constant challenge to speakers to make themselves clear, so its danger is its tendency to inhibit intellectual audacity. If everything that is stated has to be stated clearly, then thinkers whose bent is impressionistic or suggestive are made to feel that indulgence of this natural inclination is sinful, and are induced to devote their attention to those less interesting and more pedestrian problems that unimaginative but intelligent men are capable of solving. A measure of intellectual charlatanry may well be the price that has to be paid for intellectual creativeness.

Since, then, future standards of scientific judgment depend on future scientific discoveries, we could only conceivably foresee the standards if we could foresee the discoveries. Is it possible, then, to foresee scientific discoveries?[1] We have already seen a sense in which this is possible, viz. the sense in which someone may justifiably assert, given the continuance of the necessary organization and effort, that such and such a group of problems that is already in hand will be satisfactorily settled. We cannot, however, foresee what new problems will emerge even from the attempt to settle questions the general nature of which we at present understand. Indeed, when we predict that such and such problems will be solved what we are saying is that people have got a long way with allied problems, are going on trying, and are not markedly deficient in intelligence or zest. We do not predict their discoveries, for that would be to have made the discovery in advance of the discovery's having been made, and that would be contradictory. Even the supernatural prediction of a scientific discovery is thus logically impossible. For let us suppose that in a dream someone sees or hears an argument on some scientific topic, and remembers it when he wakes up. Either he understands the argument or he does not. If he understands it, then he has actually made the discovery in his dream, and can communicate it when he wakes up. If he does not, then his "discovery" is only a formula or mysterious phrase without any scientific relevance until, at some future time, the real discovery has been made. The nearest anyone could get to making supernatural predictions of scientific discoveries would be to receive supernatural hints that helped him to *make* scientific discoveries. It would seem as though occurrences are the sort of thing that can conceivably be

[1] I have seen aspects of this question discussed in the following: Charner M. Perry, *Knowledge as a Basis for Social Reform* (International Journal of Ethics, Vol. XLV, No. 3, April 1935). Frank H. Knight, *Salvation by Science: The Gospel according to Professor Lundberg* (The Journal of Political Economy, Vol. LV, No. 6, Dec. 1947). Otto Neurath, *Empirische Soziologie* (Vienna, 1931).

predicted, and that theories about occurrences cannot be predicted unless they are very generally expressed and are associated with occurrences that can be predicted. Furthermore, this principle applies not only to theories, but also to inventions, both physical and social. It is possible, given a fairly stable society, to predict that devices already in existence may be extended or improved. But to predict a specific invention would be to make the invention. It is idle to hope, therefore, that social science will ever enable us to foresee such important and interesting things. It would take us a long way from the subject of the present paper if I were to go more fully into the roots of this paradox. But it is not difficult to see that prediction is always on the basis of a theory or set of theories, and that to ask for prediction of a theory is to ask for the theory being predicted *both* to be derived from its basis in existing theory, *and* to be understood apart from this basis.

The possibilities of predicting intellectual matters are, therefore, limited, and it is clear that Comte had not paid enough attention to the philosophical problems involved. He divided human activity, we should observe, into functions of feeling and acting as well as of thinking, and held that the Law of the Three Stages applied to these other activities too. Corresponding to the theological stage of human thought was the predatory-military stage of social organization, corresponding to the positive stage of thought is the positive-industrial stage of social organization, while between the two is a stage of non-predatory or defensive military organization within which metaphysical ideas develop. There was also a corresponding development of the feelings, showing itself in the moral outlook of mankind. In the theologico-military society men's feelings are organized about their conception of a supernatural world with its rewards and punishments after death. In the intermediate revolutionary society, men's feelings are organized about their worldly self-interest, so that liberalism is held to be at the same time a metaphysical and a selfish outlook. At the positive stage of human development the agreement in opinion to which scientific method leads will, Comte predicts, combine with the sociologist's awareness of the dependence of each individual upon the whole of society to produce a regime with "love for its principle, order for its basis, and progress for its end."[1] The morality of industrial-positive society will tend to be one of universal love.

IV

We are thus led to consider the positivist morality in its connection with sociology. How has Comte been able to develop his account

[1] *Catéchisme Positiviste* (1852). Third edition, Paris, 1890, p. 59.

of the scientific study of society, in terms of hypotheses, verifications, comparisons, and history, so that towards the end of his *Cours de Philosophie Positive* he can write: "Even before the future has suitably brought into existence the universal aspirations of these high moral attributes peculiar to the positive philosophy, it will be for the true philosophers, the natural forerunners of humanity, to confirm it openly before all men, by the sustained superiority of their effective conduct, personal, domestic, and social"?[1] Positivist philosophers, we should have thought, were men who understood, or claimed to understand, how society works and develops. But Comte clearly thought they would act as moral exemplars until the time when metaphysical selfishness is replaced by positivist benevolence. How, we may ask, is a scientific knowledge of social processes to lead to a moral regeneration of mankind? I can only touch here on a few of the most important aspects of this problem.

The development as seen by Comte is as follows. In the theological era of mankind society was held together by kings and priests, the kings providing political order and the priests intellectual order. The metaphysical stage commenced with the Reformation and reached its height with the French Revolution. The old political order was weakened and dispersed, the old intellectual order crumbled under criticisms which, though effective, had no unity among themselves. A regime of force and authority was thus replaced by political, intellectual and moral anarchy. The positivist philosopher (or sociologist) was able to understand how this had come about. He was aware, too, of a set of intellectual principles which, if consistently applied, would lead to a renewal of intellectual unity. For the application of the positive method had already resulted in agreed and authoritative sciences of nature, and was leading to the construction of an agreed and equally authoritative science of society. This science makes it clear that an industrial society, based on positive science—in its turn based on practical "good sense"—is arising from a military society based on myth and force. It also shows that the elements in our society which are most likely to aid in the development of positive science and the form of society that goes with it are the proletariat and the female sex, the former because of their matter-of-factness and dislike of war, the latter because of their sympathetic and submissive dispositions. If only a group of intellectuals convinced of the truth of the positive philosophy—intellectuals have a close affinity with the proletarians, particularly as regards "their equivalent habits of material improvidence"[2]—could have control of the educational system, an intellectual unity would be achieved which would have union of action and morals as its correlative. Order would be possible with the minimum of force,

[1] VI, p. 863.

[2] *Cours de Philosophie Positive*, VI, p. 599.

and intellectual and moral rebellion would disappear. In a letter dated the thirteenth Archimedes of the year sixty-two, a day sacred in the Positivist Calendar to the mathematician Diophantus, Comte wrote: "In our opinion the final regeneration is today held back much more by undisciplined intellectuals than by wicked men of wealth. To establish against this twofold obstacle the irresistible power of the proletarians and of women, ought now to be the essential mission of the priests of humanity."[1]

It has been often alleged, both by positivists and their opponents, that Comte's enthusiasm for moral improvement and his Religion of Humanity are absurdities of his later years that lack logical connection with his philosophy of science. I do not think that this is so. As far back as the eighteen-twenties Comte's philosophy of science was linked with his aspirations for human improvement, and although the extraordinary details of his Religion of Humanity were elaborated later, the thing itself was by no means an afterthought. At the beginning of his *Cours de Philosophie Positive* (1830) he had distinguished theoretical sciences from practical sciences, and had pointed out that the effectiveness of the latter presupposes an adequate development of the former. But when he came to the sociological part of the work, his attempt to separate the art of politics from the science of sociology was not persisted in. Thus he argues in Lecture 48 that a consequence of applying the positive method to the study of human society is the discovery of regularities of conduct that cannot be arbitrarily disturbed, and that this is "the true scientific basis of human dignity," since "the main tendencies of humanity thus acquire an imposing character of authority, which must always be respected, as a prevailing foundation, by all rational legislators."[2] In the same lecture he argues that social science shows that "the whole human race (la masse de l'espèce humaine), past, present and future, forms from all points of view and to a greater and greater extent both in place and in time, an immense and eternal social unity, the various organs of which, individual or national, constantly united in an intimate and universal solidarity, inevitably co-operate . . . in the fundamental evolution of humanity . . ."[3] In Lecture 46, in the same volume, he had suggested that the use of the positive method could "preside over the final reorganization of modern societies,"[4] that the notion of a continuously developing human society gives reforming movements a stability they have hitherto lacked, that consciousness of sociological laws will serve to abate the quarrels of warring creeds, that the relative and provisional character of scientific conclusions in the sociological sphere will tend

[1] *Auguste Comte*. Littré, 1877, pp. 615–616.
[2] *Cours*, IV (1839), pp. 310–311.
[3] *Cours*, IV (1839), pp. 408–409. [4] *Cours*, IV, p. 176.

to mitigate fanaticism, and that as sociology develops men will learn resignation in the face of what cannot be altered, and will gain hope in the face of what can be. He concludes Lecture 60 in the belief that when the hope of personal immortality is replaced by consciousness of the individual's debts and possible contributions to the development of "the total existence of humanity,"[1] benevolent action and respect for human life will be increased. In Comte's later works, of course, "the total existence of humanity" became "the Great Being," but there is nothing new in principle. In his *System of Positive Polity* (1851), however, not only does he emphasize the power of sociology to produce sympathy and common action, and to discipline that pride which is a constant danger of the scientific attitude,[2] but he also concludes that sociology itself will be crowned by a science of morals.[3] From his *Discourse on the Positive Spirit* (1844) it seems that he thought it would be possible, on the basis of sociological knowledge, to demonstrate rules of moral conduct, and to pronounce authoritatively on their application to the circumstances of the time.[4]

I have given this brief account of Comte's views on how morals and sociology are related in order to show that his distinctive theory was that the pursuit of social science was itself a form of moral training. It is interesting to compare this view with the implications of his earlier distinction between the science of sociology and the art of politics. This distinction J. S. Mill, whose views on logic were much influenced by Comte, took over into Book VI of his *Logic*, where he wrote: "A scientific observer or reasoner, merely as such, is not an adviser for practice. His part is only to show that certain consequences follow from certain causes, and that to obtain certain ends, certain means are the most effectual. Whether the ends themselves are such as ought to be pursued, and if so, in what cases and to how great a length, it is no part of his business as a cultivator of science to decide, and science alone will never qualify him for the decision."[5] It seems to me that on this issue neither Comte nor Mill is wholly right. I will therefore conclude this paper with some brief observations on the relation between morals and social science.

It is easy to see that Comte's reasoning is faulty in its details. Take, for example, his argument that the acknowledgement of sociological laws provides a "scientific basis" for human dignity. Comte's reason is that a knowledge of social science will lead governments to recognize that there are definite limits to what they can hope to force or persuade their subjects to do. But a government may well recognize this, and feel obliged in consequence to abandon

[1] *Cours*, VI, p. 861.
[2] *System of Positive Polity* (English trans., 1875), I, pp. 338–346.
[3] *Ibid.*, II, p. 352. [4] § 53. [5] *System of Logic*, VI, Ch. 12, § 6.

some act of immediate tyranny, but it may also make use of its knowledge of social science—as many governments do today—gradually to change its subjects' attitudes in directions it considers suitable to its aims. Comte may have overlooked this possibility because he thought that the aspects of human nature that can not be changed very much outweigh those aspects that can be changed. In any case, he does not make it clear why it is a mark of dignity to be impervious to governmental threat or persuasion. By the "dignity of man," I suppose, we mean the capacity that some men have of acting in accordance with their view of what is right even when this may be expected to lead to their losing their goods, their comfort, or their life. Observation may show that men do act in this way, and are slow to change their views of what is right. This would dispose of shallow theories of universal selfishness, but could do nothing more to provide reasons for doing what is right. From the fact that some men cannot be forced by governments into doing what they think wrong, nothing of much significance follows as to what is right or wrong. Again, it seems to me that Comte too readily assumes that knowledge of how human society functions will lead to a desire to co-operate with other men. It is true that, in a sense, each one of us owes most of his intellectual, moral, and material powers to the work of other people and other generations. But recognition of this does little to make us more altruistic, since most of the actions we perform are directed, not to humanity as a whole, nor even to our own national community, but to other individuals who perhaps owe no less to humanity than we do. It is indeed feeble reasoning that would require me to conclude from the fact that everyone has some benefit from the social heritage that I ought to be kind to this or that individual. Even if the right conclusion is that I ought so to act that humanity gains from my action, it is by no means clear that this involves my being kind to more than a small proportion of the people I must meet. Nor had Comte much stronger grounds for hoping that the habit of generalizing which scientific studies develop might incline men of scientific training to prefer justice to partiality. For a man's generalizations as a scientist do not normally relate to himself, and so do not normally have any tendency whatever to train him in giving his own interests no more than their due weight.

These, however, are matters of detail, and do not touch what I take to be the main feature of Comte's so-called "subjective synthesis," viz. the view that the pursuit of science is a social activity that cannot claim exemption from moral criteria. It seems to me that Comte was wrong in holding that the pursuit of social science must improve men's moral dispositions and insights, but right in emphasizing that it is not a morally indifferent activity. In maintaining that science was necessarily a moralizing agency, and in

approving its pursuit accordingly, he was tacitly admitting its subordination to morals. In what follows I will endeavour to indicate some of the more obvious aspects of this subordination.

(1) Comte saw that certain features of the behaviour involved in scientific research have at any rate the appearance of being morally desirable. The master-virtue of the scientific enquirer seems to be "open-mindedness." This is the willingness to follow the argument where it leads, and to pocket one's pride when it leads in a different direction from what one had predicted. "Following the argument," furthermore, is something that no one can be forced to do, and when we say that the conclusion was "forced upon us," we do not mean that threats play any part in bringing about the relevant sort of conviction. When our sole object is to know and understand, fear and threats are nothing but hindrances. This seems to put the pursuit of science on the side of justice ("open-mindedness"), and peace ("truth cannot be forced"). It is easy to see, however, that this sort of open-mindedness and peaceableness have little to do with the justice and mercy of the moralists. For the purely scientific conceptions of open-mindedness and peaceableness would provide no rational obstacle to painful physiological experiments on innocent human beings, or to experimental researches into the effects of deception and threats. It is obvious that the pursuit of physiology has been hampered for lack of human subjects. The fact that men of science willingly submit to such limitations shows that they regard their scientific morality of "open-mindedness" as partial only, and to some extent subordinate.

(2) This applies to the social as well as to the natural sciences. Psychologists would no more experiment in driving men mad than physiologists would have recourse to physical torture. But social scientists deal with people in ways that natural scientists do not. Physicists and chemists experiment with material things, whereas social scientists must frequently deal directly with people, and are thus more likely to find the points at which desire for knowledge conflicts with other aims. An extreme case is the technique which makes use of the so-called "participant-observer," a man working with other men who, unknown to them, supplies the social investigator with information about their methods of work, etc. This is a way of getting knowledge that might otherwise be unobtainable. but in many circumstances it would be morally repugnant. It may be that it is generally more effective to gain the willing co-operation of those being investigated rather than to observe them surreptitiously, but this should not be taken to imply that there is a pre-established harmony between successful research and decent conduct. It should also be noticed that the collection of masses of information about people is regarded as necessary for the furtherance of social know-

ledge. But the effort and methods of collecting, and the extra-scientific use to which, when stored, the information might be put, cannot be regarded as morally irrelevant. The keeping of confidence and the advancement of knowledge are not always consistent.

(3) The contrast between natural and social enquiry should not, however, be pressed too far. Pursuit of the natural sciences is not merely a relationship of people to things and animals, but is generally a relationship also of people to one another, for to carry out elaborate experiments requires the setting up of elaborate social and industrial organizations. Thus the natural scientist is confronted with the moral problems involved in these much as the social scientist is confronted with his problems of confidence, interviewing methods, detachment, and the like. Furthermore, the natural scientist, once his methods involve industrial organization, is faced with some of the practical problems that face the industrialist. A marked difference, however, is that whereas it is generally regarded as legitimate to keep industrial secrets, most scientists are unhappy at the idea of there being scientific secrets. Industrial secrets are kept in the interests of the firm or group that has them, but it is believed that men of science should not have secrets from one another. The reason for this belief must be that it is thought that men of science should not work in the interests of limited groups but rather for mankind as a whole, or that they should only carry out scientific research for its own sake. However this may be, it is plain that when science is closely connected with industry and government, industrial and national interests will influence if not control its development. Governments, at any rate, want power, and when knowledge is power they want knowledge and will get and use it for whatever purposes they use the rest of their power. This is the reason why there is very little to be said for the view that increased social knowledge will enable men to prevent misuse of the power that the natural sciences have given them. The social sciences can be misused just as the natural sciences have been. Increased knowledge of one another, if "knowledge" is understood in a morally neutral sense, is no more likely to improve our conduct than is increased knowledge of electricity or brewing. Machiavelli's *Prince* is the paradigm of morally neutral social science.

(4) The words "knowledge" and "understanding," of course, are sometimes used in senses that carry a moral implication. Knowing and understanding people then become moral activities which involve sympathy and a consequent readiness to refrain from harming others. It is possible that some of those who have hoped for moral regeneration as a result of improved social knowledge have been influenced by this moral use of the word and its associates. But most of those who have advocated the application of scientific

methods to human affairs have supposed that the behaviour of people and groups will come to be understood in just the same detached way as the behaviour of, say, magnets can be understood. This sort of understanding has no moral implications.

(5) It follows from the foregoing arguments that any scientific project might be morally wrong on the score of its methods or its subject-matter, however scientifically valuable it might otherwise be. But it does not follow from this that governments are justified in controlling the pursuit of science, any more than they are justified in controlling the press because journalists can lie. Indeed, the sort of governments that exist today are more likely to pervert science than most other existing organizations are. In any case, not all types of wrong act ought to be prohibited by governments. The fact that science can claim no moral extra-territoriality does not prejudice its claims to freedom from political control.

I must now state briefly my reasons for preferring Comte's later blurring of the distinction between science as concerned with means and morals as concerned with ends, to Mill's adoption of it in his *Logic*. It will be noticed, however, that the implication of Mill's view—which is widely accepted by social scientists today—is that, science, being concerned with what causes what, is concerned, among other things, with what produces what men aim at, their immoral and non-moral as well as their moral ends. Thus the assumption is that the good and bad ends are scientifically observable entities causally linked with the means that produce them. For this to be so, however, the ends must be described in a manner that divests them of their moral features. It would not be a scientific generalization to say that this or that was a method of producing, say, economic justice. What would have to be said would be that this or that was a method of producing some given distribution of wealth, say equal money incomes. There may, however, be several ways of bringing about this end, several sorts of thing which, if done, would result in everyone having the same money income. Then either it is morally indifferent which of these means should be adopted, or moral choice is not a matter merely of ends, but also of means. No one, I believe, would argue that when a given result can be produced by several courses of conduct, it is always morally indifferent which course of conduct should be adopted. It therefore follows that, if we make the means-end distinction, we cannot hold that science is concerned with means and morality only with ends.

An adherent of the Mill theory can argue in reply that the reason why the various means are not all on the same moral level is that there are various moral ends, and that that means is preferred which leads to a given moral end without also conflicting with another moral end. Thus, if policies p, q, and r could all produce equal money

incomes, p might be morally preferred if it alone did so without coercion, the absence of coercion in human affairs being another moral end. In this way the choice between different means to one moral end would be determined by the conduciveness of these different means to some other moral end, and moral judgments would still be primarily of the ends. Absence of coercion cannot, however, be an end in the way in which, on the face of it, equality of money incomes might be. We may put the difference by saying that the having the same money income by everyone is a result that might be achieved, whereas the doing things by non-coercive means is not, in the same way, a result at all, but rather an activity or way of behaving. Whether everyone had the same income is something that might be ascertained by reference to paysheets, income tax returns, etc., but whether the economic condition thus revealed was just would depend upon how this equality was achieved and maintained, upon the intentions and attitudes of the people. Indeed, we should be in a hopeless position if some moral end had to be the goal of moral action, for we should never know how justice, benevolence, etc., would have to be combined in it, and so should never know in terms of what the rightness of individual actions would have to be judged. If actions were right or wrong in terms of some complex and intricately balanced end, a completed view of it would have to precede our detailed moral judgments, and we should have to be philosophers before we could know what was right or wrong.

PSYCHIATRIC PROLEGOMENA: A PLEA FOR THE HELP OF PHILOSOPHY

HAROLD PALMER, M.D.

PART I

"It is almost impossible for a working neurologist to think clearly about the functions of the highest centres because the counters of thought, the words he must employ—are often of psychological origin and for the most part meaningless."

W. J. Adie, *Brain*, 1926, 49, 283

"Many a scholar spends his life in accumulating data for some magnum opus which he never writes; or if he does write it, his book consists of prolegomena. But intellectual fastidiousness is a snare. It is futile to wait for a vantage point of perfection, intellectual or moral from which to act."

Sir Walter Moberley, *Crisis in the University*, p. 54

"In mediis conatibus aegri succidimus."

Virgil, *Aeneid*, 12, 910

Apologia
(*a*) The Subject Matter of Psychiatry
(*b*) The Primary Entities of Psychiatric Discourse
(*c*) The Secondary Entities of Psychiatric Discourse
(*d*) The Clinical Entities of Psychiatry
Epitome

APOLOGIA

There can be few who are more exasperating to their scientific colleagues than the professional psychiatrist, for although there is a substantial measure of agreement in the delineation of clinical syndromes, there is tremendous variation in therapeutic practice. Not only are there a variety of "schools," but there is a latitude in the employment of terms which at times seriously complicates elementary problems of communication.

There is, moreover, a curious tendency for us psychiatrists to shift our viewpoint. At one moment we are studying the disordered mechanism of "Ego" structure (psychoanalysis) whereas at another moment we are pursuing vigorous physical remedies, and at yet other moments endeavouring to harness the "group" dynamic in the service of the Self.

This tendency to shift our ground is not necessarily a bad thing, and may well be an expression of the vitality of a young and growing

science; but it often betokens an uneasiness on the part of the individual psychiatrist, especially if and when reviewing the development of his ideas he finds that he has discarded one method of approach in favour of another without achieving a synthesis within which these separate technologies are incorporated.

Nevertheless, the achievements of psychiatry are solid enough. It has already commenced to repay its debt to general medicine and commenced to build up an account in the name of the educationalist and the social scientist; and in warfare, that most searching test of the usefulness of a man, it was summoned to bring its contribution to an increasing extent.

The difficulties into which psychiatric theory has fallen are to some extent due to the psychiatrist's lack of training in philosophy. The difficulties into which psychiatric practice have fallen are largely due to a failure to distinguish the various aspects of causation. It is essential that all writers on any topic whatsoever should stipulate how they use their terms with reference to intended meaning, and in any treatise which has to do with the clinical problems of disease and invalidism it is essential that our notions of cause be made explicit. This I have endeavoured to do in these prolegomena, which, in addition, are designed as a psychiatrist's contribution towards a science of Ecology. For this, in my opinion, is the only science in this modern age which can muster all scholars effectively, whether they be in the cloister or the market place, and combine them in the pursuit of tasks which possess a common meaning to their contemporaries.

(*a*) THE SUBJECT MATTER OF PSYCHIATRY

I.

Psychiatry is a part of that knowledge for which the term "medicine" is generally employed, and concerns the study of disease and the art of healing. It assumes that there is an entity, "the self," whenever we talk about human beings, and that this entity may be thought of as a dynamic "mechanism" which possesses both a bodily and a mental aspect. It is disorders of the latter which constitute psychological disease. All our notions concerning the nature of "the self," however, are but working hypotheses, seeing that accurate knowledge on this topic would be tantamount to solving the riddle of mind-body relationship.

Disease is want of health, and the term "health" connotes freedom from pain or anguish, soundness of constitution, wholeness of function, the possession of purpose and vigour, and (up to a point) perfection and safety. It also implies a quality and degree of con-

formity with the ethos of the human community to which an individual belongs.

We seek to be cured of disease, not only as a means of safeguarding our lives and avoiding pain, but also because health is enjoyable. And there is an aspect of living (which subtends the moral order) which prompts us to equip ourselves for participation in full contributory membership of the community within which we owe domestic, social, economic, political and ethical allegiance. Some difficulties of definition are set when we consider that a person may appear and feel to be sound and healthy and yet possess tissue pathology; and further difficulty is encountered when we study an individual in his social setting seeing that morale is closely related to the problem of invalidism.

The Hippocratic tradition has established the study of disease on the basis of a knowledge of anatomy, physiology and pathology, consequently we tend to think of disease as due to disorder of some "organ." Consistent with this tradition is the habit of regarding the central nervous system as the "organ" for study by the psychiatrist. There is this difficulty, however, that we possess few direct links between our notions which deal with the anatomy and physiology of the central nervous system and our notions which deal with the "self." Intermedial between these is the notion of "mind." The Hippocratic tradition can be a serious hindrance to the psychiatrist who fails to understand causal relationships other than those which simply have to do with faulty mechanism of diseased organs.

Supposing, for instance, we select a patient suffering from asthma and inquire why he has just experienced an attack of bronchospasm. From the genetic standpoint one might learn that he comes from a family other members of which also suffer from asthma or one or other of its allied conditions. From the developmental standpoint one might see a sequence of events which commenced in childhood with the patient's first attack of bronchitis and culminated in his recent attack. From the teleological standpoint one could certainly instance a patient of whom it would be true to say that the state of invalidism, as distinct from the liability to attacks of bronchospasm, was in part due to his failure to mature, and develop goals sufficient to encourage healthy modes of living, feeling and thinking. Psychiatric skill consists largely in diagnosing proportion amongst such causal factors. The fault with most psychiatric schools of thought lies in their having laid too great an emphasis on their own chosen aspect of causality. Similarly, it is important to realize that the demands of propositional discourse often appear to require as a necessity of syntax that there be an "it," a "thing," a mechanism, which is definable and amenable to study. Now the "it" of psychiatry has been traditionally signified by such terms as the "mind" or the

"soul" or the "personality." Once, however, we make such a term as "mind" the subject of a proposition, we tend to imply that it is a substance or a faculty, and such a premise is apt to beget false inferences. These difficulties, which are in part due to the ambiguities of syntax and our habitual neglect of them, are exemplified in the history of the schoolmen who, beset by a similar problem, sought to delineate that empirical entity, the soul; and are exemplified also by the Freudian doctrines of psychoanalysis which are based on the empirical assumption that there is an "ego," an "id" and a "super-ego" disorder of whose structure and dynamic relationships are the cause of nervous or mental disorder. The American School of Psychobiologists attempted to get round some of these difficulties by postulating an entity "the whole human individual in action" as the central theme of psychiatry. That is to say, they rejected the notion of two "its"—mind and organism—and substituted a new entity in their place. This established a position which was useful in polemic but evaded the necessity of defining what use was to be made of the term "mind." The psychoanalysts did not reject the term "mind" but, in order to fit it in to their notions were forced to distinguish an "unconscious mind" from a "conscious mind." Also it is both curious and symptomatic of the type of difficulty under review that the psychoanalysts have had less to say about the "ego" than about their related concepts, the "id" and the "superego." Freud did, however, give an explicit account of his own dynamic hypothesis which he based on "life" and "death" instincts. The Behaviourist Schools appear to despair altogether of integrating both the term "mind" and the clinical concept of "consciousness" within their notions. Nevertheless, they too have required an "it" of propositional discourse, and in their discipline of studies it is the "field" concept which supplies an "it" within which, however, it has been found necessary to postulate an "ego pole" in a "bipolar field." Much of this difficulty is avoided if we accept the term "self" as signifying the central theme of psychiatry and recognizing that it possesses a bodily and a mental aspect.

It seems, therefore, as if elementary problems of communication beset the psychiatrist at the outset of his attempts to delineate his subject matter, and discussion is not made any more easy when we fail to distinguish the colloquial from the professional use of terms, or worse still, employ a variety of scientific *lingua franca* within which we reserve the undeclared right to esotericism.

Another danger which besets psychiatry is the tendency to schematize in advance of known facts, or the complementary tendency to connect our observations in a series by the use of words which attract by virtue of their apparent simplicity of relation within such a unified pattern of thought.

A particularly good example of the difficulties which invest all psychological studies is set when we inquire "what is it that knows?" For our syntax compels the metaphysical assumption that there is a knower, whereas our logic makes it look as if prima facie the knower is not wholly knowable. This problem appears to me insoluble, although we may take comfort in James's dictum that it is sufficient for us to assume that "thought goes on." This latter difficulty can be evaded with some justice by confining our interest in the topic to a discussion of "awareness of self." This will be deferred until a discussion on the "self." What appears to be reasonable is to say that all our assertions on these and kindred topics depend on the empirical witness afforded by the human mind, that is, our own, and I do not see how we can deny that this mind is conscious, which has to mean:

1. That it is aware of that which is not itself; hence
2. Aware of itself or some aspect of itself; and
3. Aware of some of its own acts.

I now propose to state what appear to me to be some of the more important basic assumptions prerequisite for a theory and practice of psychiatry. No attempt will be made to achieve serial homogeneity of terms and no schemata will be proffered. My chief aim is to set down how I opine certain terms should be used so as to render a theory and practice of psychiatry communicable and discussable.

2. PROLEPTIC BASIC ASSUMPTIONS

(*a*) *There is life and one aspect of living human beings is connoted adequately by the term "mind."*—Within the context of reference in which the term "thing" is employed, we commonly recognize two classes: those which are living and those which are not living; the class of living things, or organisms, includes human beings. The modern biologist has sought to invest the character of living things with a scientific connotation which includes the properties of assimilation, reproduction and irritability. Mind is a self-evident aspect of live human beings, especially when in their waking (conscious) as opposed to their sleeping mode of being.

Provided we are aware of the ambiguities into which the use of language may involve us I do not see any real objection to speaking of mind as a "thing" or assuming that it arises in part as a result of some human faculty. Attempts to avoid such a convention of speech are apt either to sterilize discussion or convict us of fastidiousness. The essential context of reference within which we may properly utilize the term, however, lies within the colloquial realm of discourse, and in this context we may say that mind is the realm within which

thinking, feeling, reasoning, etc., goes on. It is where symbols operate as symbols.

Meanwhile it is of interest to note that primitive people regarded evidence of that for which they utilized the term "purpose" as being evidence also of life, and their ideas concerning "what is living" were closely allied to their concept of "purpose" and "that which moves." In consequence, they developed animistic beliefs, myths and religions in relation to their hypotheses concerning a capacity to cause "movement with purpose," whenever their speculation appeared to point to its existence in nature.

If in any context we accept the term "mind," then in such a context we may proceed to study mental processes, and this is generally held to be the subject matter of psychology.

(*b*) *There is Awareness.*—My second assumption is that there is "awareness" and that this constitutes a subjectively recognizable aspect of human beings, and that evidence that it exists is manifest to an observer. This also I hold to be self-evident in general, but meriting scientific analysis in particular instances. I assume that all living whole individual organisms manifest a property which corresponds to that which we speak of as "awareness" in human beings.

(*c*) *There is Experience.*—My third assumption is that whenever we are studying whole individuals there is an active individual, an "experiencer" which is capable of selective attention.

(*d*) *Whole Human Beings are either awake* (*conscious*) *or asleep.*—My fourth assumption is that within the clinician's context of reference there is a quality which is connoted adjectivally by means of the term "conscious" which describes the waking mode of human beings as distinct from that other physiological mode of being which is to be asleep. In the clinical context which contains these two terms there are, in addition, states of being partially conscious and states of being unconscious which, however, do not refer to whole individuals.

(*e*) *There are Selves.*—My fifth assumption is that conscious human beings are "experiencers" and constitute the "subject" in a total biological field whose "objects" are determined in part by their biological relevance and in part by the selective activity of the subject's attention. This "subject" I hold to be comprised of the "self" and its sub-systems. That there are subjects and objects, and that relation exists between them is therefore assumed in this universe of discourse; and this relation is fundamental to the problem of "meaning." This self I hold to possess a bodily and a mental aspect.

(*f*) *There is Knowledge.*—My sixth assumption is that the verb "to know" refers to one aspect of this relation, and that the noun "knowledge" refers to the stored products of this activity. The two

terms are strictly only admissible in a human context, but I assume that all whole living individual organisms manifest a relation comparable to this activity of learning.

(*g*) *There is Memory.*—My seventh assumption is that the term "mnemic" refers adequately to that capacity of organism which includes both the ability of individuals to acquire the products of knowing and to integrate such products with previously acquired knowledge and any other organismal event which possesses topical relevance. I assume that some measure of mnemic capacity is fundamental to all living tissues which are whole individuals. The term "mnemic" appertains to the universe of discourse of biological philosophy. The term memory belongs to the universe of discourse of both psychologist and ordinary speech.

(*h*) *Communication occurs between human beings.*—My eighth assumption is that communication is possible between human beings by means of symbols. Of these I recognize two varieties, speech and gesture. Mind is the name we employ to signify both the territory in which we operate with symbols as symbols, and the faculty whereby these operations take place.

(*i*) *There are Symbols.*—My ninth assumption is that there are symbols, and that these possess meaning for minds. It appears to me that the meanings of symbols are, strictly speaking, peculiar to individual minds, but by virtue of my eighth assumption and also by virtue of the gregarious nature of man, the meaning of one man's symbols tends to be "more or less" identical with the meaning of the symbols employed by other men who possess the same racial, social, temporal, linguistic and educational affinities.

(*j*) *There is Introspection.*—My tenth assumption is that introspection occurs, and that this term refers to a self-evident aspect of human experience of which we are all aware. That is to say, I assume that we can become acquainted with our own mental processes. That which introspects is a part of the self.

(*k*) *Human Minds resemble one another.*—My eleventh assumption is that given (more or less) the same viewpoint in time and space, a sign situation is capable of yielding (more or less) similar percepts in the minds of more than one percipient. I can see no considerable way of testing this assumption except through the measurement of behaviour.

(*l*) *Meaning.*—My twelfth assumption is that the term meaning refers to the interpretation by individuals of sign situations, and in the context of reference which concerns minds involves thought process, symbol and referent, this process being accompanied by affect.

Meaning where minds are concerned can rarely be communicated entirely unless at the same time we are able to share in the total

situation with the person with whom we are entering into communication. This remark is especially true where affect is concerned. We may say that meaning is a property of certain of those relations which involves that which we call life, one aspect of which concerns minds, but we must make a clear distinction between the restricted notion of "meaning for minds" and the extended use of the term when we speak of or imply "meaning for organism."

In English, however, we utilize the term meaning in more than one sense. There is the volitional sense, involved, for instance, in these prolegomena. What I try to convey is what "I mean" or "intend," and this sense is closely connected with that other sense in which we refer to a referent, that is to say, the third term of a relation. There is another sense in which it is employed to signify the whole of a three-term relation involving:

(*a*) Mind.
(*b*) Symbol.
(*c*) That which the symbol symbolizes.

When used in this latter sense we are concerned with that which we call "interpretation." When an organism is able to interpret any perceived situation as a sign, i.e. as having biological relevance for it, then we may say that this situation has recognized meaning for the organism. And there is a third sense in which it is employed to signify a property of the subject, i.e. knowledge. It is the ascription of meaning exclusively to one particular aspect of the self-environment relationship which has provided a variety of speculative hypotheses with which philosophers are concerned. For instance, subjective idealism infers that meaning is the exclusive property of subjects. A difficult problem of which the psychiatrist is aware without feeling under any responsibility to furnish the solution, is the question of the emergence of meaning in the philogenetic and ontogenetic scales; and of particular interest is the problem of meaning as applied to diencephalic mechanisms of man. Indeed the mind-matter dualism problem is very pervasive, and it is equally elusive of solution. Meaning concerns human minds, but biologists tend to extend the use of the term both to lower organisms and also to physiological events in which the question of mind does not enter. If we could satisfy the apparent demands of these situations (e.g. when discussing tropism) we should no doubt have solved the problem of mind-matter dualism. Many of us accept a pragmatic extension by analogy to such situations and utilize the term "meaning" in such an extended sense, but by so doing we open the door to a similar extension of the term "mind." The psychiatrist is fortunately not concerned with this problem except when he comes to deal with the "unconscious." If, however, this be only something "of which at

present I am not aware" and we do not speak of "unconscious mind" there is no terminological difficulty.

An example of the manner in which these discussions are influenced by language is seen when we reflect that the meeting place between mind and matter in our experience is often supposed to be external to the human organism. If we make "organism" the "subject" of all propositions which concern relationship with environment, this traditional assumption will follow. There is much to suggest, as has been pointed out by Lord Samuel, that the boundary between body and not-body is internal, for when a sensory impulse is initiated by external stimuli the various processes whereby the result of such external stimuli are conveyed to the brain is of a special variety, but is not fundamentally of a different order from the physical events which initiated the stimulus. "By some means or other, within the brain, these physical events are translated into mental events. Of the nature of the process whereby this transformation takes place we are entirely ignorant." Perhaps, however, our ancestors were correct in thinking of mind both as a faculty and as a territory within which the products of this faculty were to be found.

There is evidence that we must nowadays think of the diencephalon as a primitive functional unit which is concerned with something akin to mind, but not the same as that which we ordinarily speak of as mind. Equally there is evidence that there are other less primitive mechanisms associated more with the telencephalon to which the same remarks apply. It is a speculative hypothesis of these prolegomena that meaning for human minds is concerned with relation between these two systems or, if we side-step into the conventional terms of psychology, that mind is affect becoming cognitive.

We may summarize this discussion on meaning by observing that all such discussions are perilously near a logomachy, but that having invented language we necessarily become involved in philosophy. The psychiatrist need not be deterred from adopting assumptions common to all mankind, viz. that we ourselves exist and think and that our "self" possesses an aspect we speak of as the body and an aspect we speak of as the mind.

If these be allowed it will be seen that of prime importance is a discussion of "awareness of self." The "self" appears to me to be the true starting point of psychology, and is "that which goes wrong," so to speak, when the patient comes to the psychiatrist for treatment.

3. THE UNIVERSE OF DISCOURSE OF THE PSYCHIATRIST

It will be seen that the presentation of these assumptions has involved the use of terms which possess many contexts of reference. For the most part they are terms derived from colloquial speech,

for it is my opinion that to some extent we are being scientific when we commence with what appears to be self-evident. To deny this would undermine the whole business of communication. For scientific truth is but the refining of our ideas, the organization of knowledge and the discovery of new facts which all have to be related ultimately to ourselves. It is a totally different question when we admit the desirability of questioning what appears to be self-evident. But there must be a beginning, and over fastidiousness has to be eschewed as much as the facile employment of terms. In the psychiatrist's *lingua franca* there are terms familiar to the physicist who studies "things" or events, terms familiar to the physiologist who studies "processes" and terms familiar to the psychologist who studies "experience" and mental processes. Unless in addition the bulk of his terms are familiar to the novelist, the dramatist and the practical man of affairs, he will soon find himself a long stage removed from contact with his patients.

The question arises whether or not there exists a context of reference within which terms of specific psychiatric significance only may be employed. The answer is that such a context exists, and that our notions respecting the structural organization of the self demand such a set of terms. This was the quandary which the psychoanalysts were forced to meet with their erstwhile esoteric vocabulary. For this is the central theme of psychiatric discourse, viz. that communication between minds concerns thoughts, feelings and actions which relate to a "self" of which we are in part severally aware, and an environment about which knowledge is possible and exists, and that this relation constitutes experience.

When the structure of the self is faulty or its dynamic relations disturbed, neurosis or psychosis is likely to develop and, under such conditions, the patient may present himself for treatment as a sick person.

I will close this section which has to do with the use of terms and samples of the basic assumptions which are a prerequisite of communication by citing as an example the problem of pain. For pain exemplifies a particular relation between a self and its environment which cannot be understood without a context of reference which admits the terms "mind" and "meaning." Nevertheless, pain is related to the physicist's realm of "things" whenever we study the effects of anodynes, and it is related to the physiologist's realm of "processes" whenever we study peripheral sensory events. We can speak of and imagine a hot, heavy or luminous planet, and even (if we are poets) a melodious planet! But the concept of a painful planet would immediately engender ridicule or be tantamount to crediting such a planet with mind and the attributes of a self. We should, indeed, be able to say that such a planet had had an experience!

Perhaps our greatest difficulty is the esotericism which habitually afflicts the psychiatrist. This cannot entirely be avoided; but provided we set down how we propose to use our terms, we shall have used language as a means of intelligent communication.

Having advanced a claim for psychiatry as a separate discipline of study, but one possessing very special difficulties of reference, we may now proceed to see how it is related to the other biological sciences.

4. THE RELATION OF PSYCHIATRY TO THE OTHER BIOLOGICAL SCIENCES

If these assumptions be allowed, we may now assert that biology is that branch of human knowledge which is the science of living things or organisms. It includes several subsidiary sciences of which physiology studies those processes on which life depends.

Physiologists usually postulate irritability, assimilation and reproduction as characterizing life at its simplest level of morphological organization; but a study of tropism suggests that equally fundamental characteristics exist which are comparable to that which when associated with conscious human beings, are spoken of by psychologists as comprising active selective attention, and which emerge as purposive behaviour. As a consequence of his tacit acceptance of these notions, and for pragmatic convenience, the biologist often extends his use of the term "meaning" with reference to all vital phenomena and similarly assumes that mnemic qualities appertain to organisms whatever their level of philogenetic development.

It will be seen, therefore, that there are terms and concepts linking the student of mind with the physiologist which concern the most primitive level of morphological organization of living cells. More clearly defined operational links exist between the physiologist's discourse and the psychologist's discourse when they make behaviour the subject of study. A good example of this is the conditioned reflex. The clinical psychiatrist's discourse, however, is distinguished by the necessity of having to take into account that which in clinical parlance is spoken of as "consciousness," and occupying a central and critical position in his system is the problem of "awareness of self," seeing that this is a part of human experience. This problem of "consciousness" cannot be avoided in any clinical context of reference and not only does it distinguish the psychiatrist's discourse but also separates him from those psychologists who (leaving aside the problem of mind), prefer not to employ the term or study the phenomenon.

To reject "consciousness" or to reject "mind" as legitimate entities for study is usually a prelude to esotericism (where it is not a pathological symptom), and no clinician could possibly pursue his

craft on the basis of a psychology which did not tacitly accept their reality. Behaviourism, nevertheless, has attempted to erect such a structure of knowledge. The danger inherent in behavioural psychologies is that they are likely to be used as a form of polemical evasion of these and similar issues.

In the section dealing with basic assumptions it will be seen how, in order to cope with the practical demands of his craft, the psychiatrist requires to accept mind as an entity, assigning *ex hypothesi* a special mental aspect of experience to those situations which are concerned with the interpretation of signs. He accepts the operation of symbols, of which speech is a particular instance, as taking place within this realm of mind. Where human beings are concerned it seems doubtful if we can separate the notion of experience from the notion of the conscious mode of being.

Since the days of Kant it has become customary to divide the study of experience (which is mental and conscious) into its cognitive, affective and conative aspects. We see, therefore, that the common meeting ground of the psychologist, the physiologist, and the psychiatrist lies in the study of behaviour and the conditions which determine and govern the state of active selective attentiveness. In addition to such problems, the psychiatrist is particularly concerned with hypotheses which have to do with the structure and dynamic relations of the self. All this territory of study involves him to some extent with problems which have to do with that which we call "thinking," but in this latter respect he shares his studies with the psychologist.

We can now proceed to a discussion of the primary entities of psychiatric discourse.

(*b*) THE PRIMARY ENTITIES OF PSYCHIATRIC DISCOURSE

1. Awareness: The Conscious State of Whole Individuals

When we say that a human being is "conscious" we are describing a physiological state which in general we all recognize; it is the waking state as opposed to the sleeping state. But from the moment of birth it is as if those mental functions which are dependent on primitive awareness (diencephalic) commence to develop by relation with those mental functions which are dependent on cognition (telencephalic), and it is necessary to distinguish between "being aware" (i.e. conscious in clinical parlance) and being able to know (full consciousness in clinical parlance). The growth of mind is, I suggest, a function of this relation and from whatever faculty it is subtended.

If we were to switch on an electric light in a well-furnished room containing many personal souvenirs and try and imagine what the

room looked like before it had been decorated and furnished, we should be in an analogous quandary to the adult mind trying to distinguish between the physiological state of awareness or "being conscious" and the psychological realm of "consciousness." If we pursue this analogy we may say that "to be conscious" merely implies that the light has been switched on, that is to say, "awareness" exists. This analogy is admittedly a somewhat primitive way of envisaging some of the operations of mind which I have utilized to distinguish primitive awareness from cognizance (i.e. between being conscious and "consciousness").

There is some evidence that in Petit Mal and in the condition of visual agnosia we have clinical states in which a diencephalic disturbance of this nature is involved. There are, however, degrees of "being conscious" ranging from the heightened state of attentiveness denoted by the terms "interest" and "curiosity" to torpid states which occur just prior to and just after sleep. In addition to these torpid states and also that physiological variety of "being unconscious" which we recognize as sleep (which exhibits varying degrees of depth), there are certain pathological states in which consciousness is either interfered with or lost completely as, for instance, in coma. We may say that a patient is emerging from coma with the appearance of protective reflexes, and that our patient is "conscious" the moment he can communicate and recognize, that is to say, with the restoration of mental mnemic functions. To be "conscious" therefore, is synonymous with "to be aware"; and this constitutes the most highly integrated level of human beings to which physiological terms refer.

2. Consciousness

Embryologists have brought forward evidence that the foetus may be regarded as a sentient being; but from the moment of birth the infant's cognitive faculties commence to operate in earnest. In particular, there arises a system of relation between affect and cognition, and it is possible that "mind" is the term we use to denote this system of relations, and that "recognition" is the evidence we possess that "mind" is in operation. The term "consciousness" is often used somewhat ambiguously. Sometimes it is used to signify "being conscious"; this is the clinical and also both a physiological and a psychological use; sometimes to signify "mental content," this is a psychological use. Erstwhile it has in addition often been used to signify "awareness of self," and historically this third sense is the one completely unambiguous one to which we may put the term. The importance of making these distinctions is necessary if we are to discuss and understand certain morbid clinical states such as post-

epileptic automatism and the condition of visual agnosia, and as has already been pointed out, to avoid confusion between the physiological, the psychological and the psychiatric realms of discourse. For, within the psychiatric realm of discourse, we nowadays employ the term "consciousness" as well as the expression "self-consciousness" to connote certain aspects of "mind."

3. The Self

The foetus may be dimly aware of its body; the newborn child is by nature aware of its body. From this experience the infant is able to develop its orientation in space. This process is fundamental to the development of the mental aspect of the "self." As Kohler (quoted by Koffka) says: "What is there just behind what is in front . . . below what is above . . . above what is below . . . in front of what is behind . . . why myself!"

There are other sources from which the adult concept of what is "myself" is built up. There is "that which speaks" . . . "that which sees" . . . "that which hears," and so forth. Moreover, there is apparently a "watcher" self, an empirical witness who seems to see and know that all this is going on; and there is a mental event which we call introspection whereby we appear to be able to commune with our own minds. There is unfortunately much disagreement and confusion of terminology about these matters, the whole constituting a most remarkable paradox so that what is assumed to be self-evident to most of mankind, viz. that there are "selves" has become the ground for speculative hypotheses amongst scientists, few of whom would agree.

The Freudian hypotheses meanwhile require the existence of an "ego," which is largely unconscious but which has a dominant regulative function and controls that which we call purpose, and this in turn possesses relation to other dynamic structures, the "id" and "superego."

What is most important is that we should avoid esoteric architectural schemata in relation to these various aspects of the "self" and keep well in view the self-evident proposition that "John Smith" can only be thought of in the psychiatric realm of discourse in the same manner as he thinks about his own "self" and credit him with this entity. What is not self-evident is the fact that there are many aspects of the "self" and especially that aspect to which the psychoanalytic term "ego" refers. And it is not self-evident that it is this "self" system which is primarily concerned in the study of clinical mental disorder.

I am driving a car at 50 m.p.h. along a wet and winding road and carrying on a discussion with a companion and mentally noting

the condition of the experiment as I carry out a simple arithmetical calculation. Moreover, as a law-abiding citizen, I scrupulously observe the rules of the road as I press on to reach my destination in time for dinner with my intended host. It is I "John Smith" who is at the driving wheel and control the intricacies of a skilled behaviour. It is I "John Smith" who is affronted if the oncoming car pushes me into the curb, and I "John Smith" who has maintained my car in a spick and span condition. It is I "John Smith" who is noting and watching all these events with introspective curiosity, and I "John Smith" whose humour is alive to the possible obsessional features of the experiment which has loaded an arithmetical calculation to the test. It is I "John Smith" who is conversing with my companion. It is I "John Smith" who at odd moments during this episode recalls myself "John Smith" writing in my study the previous week. Of all this I am conscious, but I am not conscious of much more that is transpiring within my body and mind upon which my experiment depends, and I may be very imperfectly aware of the impression I am making on my companion, although I fully realize that her impression may not be congruent with my own estimation. Suddenly an oncoming car swerves round a bend and I jam on my brakes and bring my car to a safe halt to avoid an accident. I do all this "without thinking," as we should say, and yet all these processes concern that which we call "mind" and in greater or less degree concern a variety of aspects of the "self" and, in one or two aspects, that which the psychiatrist speaks of as the "ego."

The psychiatrist must leave discussion concerning these various aspects of the mental aspect of the self to the academic psychologist and assess for himself that part which concerns purpose. For had "John Smith" had a high load of "neuroticism" he might have been involved in an accident and if he were suffering from a neurosis he might fail to keep his appointment, arrive late, or meanwhile have annoyed or bored his companion.

We have already seen how in general there are two important schools of clinical thought in these matters. The one suggesting that "the whole-individual-in-action" . . . all of these "selves" . . . is the subject for study, whereas the other is more particularly concerned with an inner core, a substantial self which somehow underlies the complexities of mind, the "ego" and its dynamic relationship to hypothetical structures, the Id and the Superego. (Adolf Meyer: *Sigmund Freud.*)

These discussions are not entirely metaphysical, for in the various clinical states of unreality and in the experimental condition of ether abreaction we possess evidence that the operations of mind involve such a related group of functional systems. There is "I who am speaking," "myself, including my body and mind," a "Watcher"

who is disembodied, and "me" of whom "I" can relate facts. There is other experimental evidence for an "ego" as distinct from these other aspects of the self involved, for instance, in judgment and memory. On the other hand, much speculative metaphysics has in the past been devoted to such terms as "soul" or "spirit" and these have varied within the confines of the various linguistic cultures. Now, whatever else all the above is concerned with, by common consent it concerns "thinking."

4. Thought

Thinking is that which concerns the operations of symbols and is that which relates symbols to referents and symbols to affect. That we think and that others think are assumptions, to question whose self-evidence engenders an immediate illogicality; but the processes and the nature of thought constitute legitimate fields for speculative inquiry. To our ancestors the term "mind" signified both the realm and the faculties of thinking and feeling. Some forms of thinking can apparently be simulated by mechanical means, as, for instance, some of the computations of mathematics. These correspond to the more purely cognitive aspects of thinking, and it appears as if the cerebral cortex possesses the faculty of producing small scale models of that which we speak of as external reality. The orective aspects of thinking are, on the other hand, personal events which we nevertheless assume on reasonable evidence are similar to those which occur within the minds of others; and in consequence communication between human beings is possible. We communicate by means of audible symbols or gesture. However, man cannot exist except in a society, and his symbols are derived from the group in which he lives, and this favours the development of common values in his symbols. It is only in comparatively recent times, however, that we have come to appreciate the extent to which symbols may vary in respect of their meaning when employed even by closely related members of the same social group. Now, if mind is that whereby the orective and cognitive faculties achieve relation, it appears that its development takes place first through gesture, then through myth, and later by cultivation of rational thought. But rational thought requires a highly developed language whose terms are capable of definition and whose syntax imposes its own parameter on discussion. These matters are the concern of the science of semantics and the science of epistemology. A study of the manner in which symbols arise and the laws and character of their operation is the concern of psychology.

Perhaps one of the most significant developments in human biology has been the contribution of Freud to the study of the laws

which govern thought. For whereas our ancestors had divined the general distinction between the cognitive and the orective aspects of mind, and whereas we may infer that they divined in principle the existence of mental processes proceeding outside the realm of conscious mind, it was not until Freud's advent that anything approaching a scientific study of thinking in relation to affect was made. The laws governing the association of ideas and the fact that unconscious mental processes govern not only ideas but conduct, is nowadays so taken for granted that we are in danger of forgetting how novel these propositions were a short time ago. A pretty problem of terminology has thereby been created; for it seems probable that our ancestors would have assumed that the term "thought" automatically referred to the waking mode of mind. Nevertheless they recognized that mode of mind which is concerned with dreams. Whether strictly speaking we may say that there is unconscious thinking is mainly a problem of etymology; (but we must concede to our vocabulary its right to grow). However, we may speak of "the unconscious" and of "unconscious mental processes." The precise position of that which occurs in dreams is, of course, only possible to fit in with a theory which recognizes thoughts which are "unconscious," for we are not "conscious" when we dream. Our ancestors would probably have stumbled over the question "are we thinking when we dream?" The modern psychiatrist is bound to assume that we do think when we dream, albeit the type of thinking is different from that which takes place when we are "conscious," except with reference to the insane in whom there is not the same distinction. Fortunately we now possess an experimental situation whereby we can demonstrate the two types (at least two) of thinking when utilizing the ether abreaction technique we can witness our patient indulge the experience of the two varieties of thought.

We may define thinking as that which concerns the operation of symbols, both with regard to external reality (cognitive relation of symbol to referent) and to internal reality (relating symbol to orective function of organism). With reference to the problem of the "self," what seems certain is that we cannot assume that the knower is constituted by its capacity to know for it is impossible for anything to be constituted by its relations.

5. Mind

It seems doubtful whether it is possible to offer a satisfactory lexical definition of this term, and when seeking to stipulate my own views as to how it may be used I personally do not feel able to restrict my use of the term to any one of the many senses in which it may be employed. It is pre-eminently a term within that scientific

lingua franca whose use exposes us to the logical hazards of improper conjunctive propositions and offences against grammar.

In general, these prolegomena envisage a category of "people" who it is assumed possess a bodily and a mental aspect. This corresponds to the viewpoint of the psychobiologist who thereby erects a polemical evasion of how the term "mind" is to be employed. To rely on such an idiom is proper but to some extent fastidious. For the clinical psychiatrist must of necessity be able to enter into the language habits of his technical literature and also be able to communicate with his patients. To much of the former and most of the latter the term "mind" is employed in one of three main senses. It may be used to signify a "realm" in which thinking, feeling, memorizing, reasoning, etc., takes place, or it may be utilized to signify a faculty or congeries of faculties which enable these events to occur. The third sense tends to imply the existence of a special mental dynamism and is closely connected with our notion of purpose or our experience of action as human individuals.

Each of these three senses is compatible with that notion of mental events which has to do with the recognition of symbols or the interpretation of sign situations. An understanding of this problem is bound up with the meaning of the term "meaning," and "biological relevance," and these notions ultimately lead us to a discussion upon the nature of life. Of this we are ignorant, nor do I believe that it lies within the power of language to frame propositions on this topic which are not either on the one hand tautological or on the other hand vehicles of improper conjunctions.

However, I regard the first of these idioms both as convenient and well-nigh indispensable. It is, nevertheless, obnoxious to some philosophers, exposes us to the ambiguities of syntax, and involves us in the problem set by the inquiry concerning the nature of what it is that knows.

The second of these idioms has fewer objections provided we assume solely that there is a faculty whereby mental events are possible. Nevertheless, it too is obnoxious to those who do not derive comfort from the use of the term "faculty."

The third of these idioms may be sustained if we avoid the adjectival prefix "mental." For many of us cannot think about life without recourse to the notion of dynamism or think of people without recourse to the notion of purpose, and few, if any, clinicians can manage to manipulate their clinical notions without recourse to this idiom.

It is perhaps as well to reflect that these idioms are of colloquial origin, consequent upon the employment of language. But immediately we try to give scientific connotation to the term "mind" we fumble, because it possesses no referent in the realm of things in quite the same sense as those which are ordinarily considered measurable.

Lying behind a discussion of the proper contexts within which we may use this term is a discussion concerning the manner in which it ever arose, and this involves consideration of the nature of symbols, the notion of introspection and certain aspects of behaviour. For symbols are commonly held to be that which possess meaning for minds and the notion of introspection would appear to involve us in accepting both the subsidiary notion of dynamism and the notion of a subject who possesses privileged access to "the mental aspect of the self." And if communication by means of speech occurs between two people then it seems proper to put the question: "What is it that communicates by means of speech, and with what?" If we furnish the answer "It is a self which communicates with a self," I suspect we shall only succeed in transferring our difficulties on to another topic.

There are other clinical problems equally hazardous to the logician which are apt to beget notions similar to those of "mind." Of these perhaps the notion of "consciousness" is the most prominent, although many others such as "thought" could be instanced.

Many of us habitually assume that provided we are informed of the ambiguities of syntax which beset these discussions, that we shall have safeguarded any discussion which employs the idiom. In practice this is far from being the case, and the faulty parameter thereby established is nowhere exhibited to better account than when we proceed to inquire at what point in the philogenetic or ontogenetic scale "meaning" is involved or "mind" arises or reflect on the extended use to which biologists habitually put the former term. Indeed, many of the apparent problems which beset psychology arise out of the conjunction of propositions which embody items from different categories. The discovery of language is nowadays held to have been more troublesome than Prometheus' discovery of fire!

There is a curious tendency for psychologists to erect schemata illustrating their notions of the structure of mind which are not only saturated with illogicality but far in advance of any notions which may be made the subject of scientific verification or are justified by clinical studies. Nevertheless they have been the occasion of fruitful advances in therapy. And we may compare this opinion with the reflection that one cannot imagine a culture without a religion, and yet the notion of the human soul is, I suspect, not amenable to scientific experiment. In particular, it is safe to assert that modern psychiatry is unintelligible without a knowledge of psychoanalytic doctrine and yet the ego, the id and the superego are but extensions of an idiom. All treatises on the mental aspect of selves sooner or later employ magic terms whose chief value is to exorcise our feelings of frustration, but whose ultimate end is heresy and schism. For the only catholic category is that which the novelist and unsophisticated man utilizes when he uses such a sentence as "I met John Smith

today," or "John Smith did so and so," or "I talked with John Smith," or when addressing John Smith, "What do you think or propose to do?" John Smith's correct reply to a certain question would without philosophical impropriety be "I myself did so and so, or thought so and so" and never in all these sentences would the term "mind" be employed. As soon as we introduce the concept of mind in any of the three sentences listed above we impose a parameter whose influence invades a wide number of topics, and the psychiatrist owes much to those philosophers who have sought to disentangle the faulty inferences thereby engendered. On the other hand, perhaps a few clinical instances may be cited to illustrate the difficulties which afflict the physician who has to nominate concepts with which to communicate his notions.

In the clinical state of derealization the patient complains of a dislocation of the meaning of his percepts. In the sister condition of depersonalization he complains of a similar dislocation which he refers to the bodily aspect of the self. Now in the sense that such patients may be spoken of as possessing a body, they may be spoken of as possessing a mind. It is noteworthy, moreover, that in the former condition the patient denies any dislocation of his "self." Our clinical notions of such an episode clearly appear to require two terms to distinguish a "mental aspect of the self" from yet another aspect, which is not body and which the patient himself would say was his "self."

In the clinical condition of watchful visual agnosia the patient is "conscious," i.e. awake and aware and yet lives in a world of considerably restricted meaning. There is a mental aspect of self whose behaviour can be observed and yet there is something else which is dislocated. Indeed, this condition exemplifies the distinction between awareness and recognition, and possibly supports my contention that "mind" relates these two aspects of the self.

In post-epileptic automatic states we can observe the patient exhibiting mental aspects and bodily aspects of behaviour. We require a word to name that which is dislocated. Colloquial idiom would unhesitatingly refer this dislocation to the "mind."

There is ample scientific evidence that symbols operate below the level of the conscious state, as for instance in the process of free association and in dreams. A sleeping mother is aware of her child's presence and movements and yet, for instance, while asleep is unable to "know the time." The pragmatic necessity of manipulating our notions which have to do with these and a host of other episodes compels an empiricism within which we talk as if there were a dualism of mind and body. Within this empiricism and amongst the most significant body of hypotheses for modern psychiatry are those developed by Freud.

These assume the existence of an "Eros" force or instinct tending to reproduction of the species, and a "death" instinct tending to completion of the personality of the individual. The structure and development of "mind" in their view is to be understood in terms of the interaction and growth of these two basic life principles. This mythology is fruitful, and appears to correspond to many of the clinical facts of "mental" disease. Many religions are concerned with hypotheses which conceive the dynamic of selves as emanating from a deity. These myths are fruitful and appear to correspond to our experience of that which we call purpose. More recently there has appeared (especially in relation to political ideologies) an attempt to understand the mental aspect of selves in terms of social field forces. The fruit of this idiom has yet to be assessed, but the determinism which it involves certainly might appear to be at variance with Western European Christian Philosophy.

Nevertheless, this latter idiom is not unrelated to the viewpoint of these prolegomena which envisages that full contributory membership of society is dynamically related to the problem of integration of the self. This viewpoint is consistent with the medieval concept of man as a member of a number of organic social units. These prolegomena stop short of proffering notions concerning the purpose of society. For this is not a problem for which any psychiatrist (*qua* psychiatrist) has any specific terms of reference to discuss.

Suppose now we return to the employment of the idiom whose faulty parameter admittedly involves us in the use of improper conjunctions; and without being able to defend its logic assert that "Mind is the mental aspect of the self and may be thought of either as a realm in which symbols operate as symbols or as the faculty which enables this to occur, or as the dynamic mechanism underlying the mental aspect of the self." Then within such idiomatic convention we may claim that in common parlance "I" signifies that aspect of the mind which is most closely connected with the dynamic aspects of the self. And if there be daemonic levels of the self of which we are not capable of direct awareness, but of whose existence we appear to have indirect but cogent evidence, and if we accept the psychoanalytic notions of the unconscious as corresponding to these daemonic levels, then it will be found necessary to supply a term which stands in the same regulative relation to the "unconscious" (or id of the psychoanalysts) as the "I" does to the conscious state. In psychoanalytic doctrine the "I" and the regulative aspect of the unconscious are denoted by the inclusive term "Ego," and in addition the term "superego" is utilized to signify that aspect of the ego which corresponds more or less to the traditional notions of conscience.

These notions are but working hypotheses, and it is perhaps as

well to reflect that should we ever succeed in the attempt to offer a lexical definition of this class of concept within the same category as measurable things, we should have "solved" the "riddle" of mind-body dualism. The possibility that such an attempt is irrational must, however, not be overlooked. These prolegomena offer but a stipulative definition of terms, but it is important to make explicit the fact that necessity has appeared to compel an empiricism in which there are "minds."

We may summarize this section by saying that the only logical category within which a discussion of human beings can occur is that of "self" and what seems important in clinical psychiatry is the perception that with whatever else such disease as he is called upon professionally to treat have to do, they are something that concerns dislocation of the self and the self-image. On the other hand, in much of his discussions he is compelled to talk as if there were a mind-body dualism.

The psychiatrist cannot hope to achieve consistency except within the particular realm of discourse and about the particular topic with which he is concerned at any moment. The list of topics referred to under the heading of primary entities do not refer to items within the same category. For he is at one moment looking over his shoulder so to speak at his physiological colleague, and at the next moment at his psychological colleague, and at yet another at his anatomist colleague. At all times he is endeavouring to interpret clinical medicine in terms which are communicable to the patient, and he lives in mortal fear of his philosopher colleague. He can only escape from these difficulties when employing the novelist's and dramatist's idiom, and such is lacking in classificatory disposition.

At this point, however, we may now enter a new realm of discourse whose terms also possess no measurable referents, but in whose case propositions are not likely to engage the serious attention either of the epistemologist or philosopher. A discussion of these secondary entities is a prerequisite if we are to link psychiatric notions with sociology.

(*To be continued.*)

THE PROBLEM OF DUTY AND KNOWLEDGE

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In his book *The Right and the Good* Professor W. D. Ross states a theory that ethics is concerned with two distinct conceptions which are logically quite independent of each other and must not be confused: the right, viz. the act which we are under an obligation to do irrespective of our motives, and the morally good, viz. the good motives, desires and so on, irrespective of what actions they lead us to. In a later book, *Foundations of Ethics*, he repeats this theory somewhat altered and enlarged. Professor Broad says about the first book that it is "the most important contribution to ethical theory made in England for a generation," and for the second book he proposes the nickname "the righter and the better." I agree with him in both, but I cannot help thinking that on one point Professor Ross has altered his opinion in a somewhat wrong direction. In *The Right and the Good* he says that the right act, that which it is my duty to do, is the same act whether I know it or think another act to be my duty, but in *Foundations of Ethics* he has adopted the opposite opinion, saying that my duty is always the act which I believe to be my duty. My aim in this paper is to show that this latter opinion of his is not what ordinary people think about duty. The question is more urgent now than when Professor Ross wrote his books, for if his latter view is true we must confess that many Germans have no doubt been prosecuted by the Allies for having done their duty.

What act a certain person should do in a given situation, according to Professor Ross depends on what prima facie duties this situation involves. Such duties are: the duty to promote the good, to fulfil promises that the agent himself has given, and so on. These prima facie duties or "claims" are of different strength, and they often point to different acts. The act which is most urgently pointed to is the right act, or the agent's duty. But now we have to distinguish between two elements, the objective and the subjective. "The objective element consists of the facts about the various persons and things involved in the situation, in virtue of which a certain act would in fact be the best possible fulfilment of the various prima facie obligations resting on the agent. . . . The subjective element consists of the agent's thoughts about the situation." The question is: If different acts suit the objective and the subjective features of the situation, which of the two acts is the one we ought to do? The inquiry must be divided into two sections because the ignorance that is responsible for the difference between the subjective and objective features may be of two types. It may be either ignorance of the real

facts or ignorance of what is morally suitable to the supposed facts, or both of course. Thus we sometimes have to distinguish between that duty which is subjective as regards facts but objective as regards what is morally suitable to these supposed facts, and that duty which is subjective in both respects. Professor Ross means that *the* duty, i.e. the act which we are under an obligation to do is always the latter of the two.

The first question concerns the ignorance of facts. In this matter Professor Ross confesses that he owes his conversion to Professor Prichard's lecture "Duty and Ignorance of Facts" (*Proceedings of the Br. Ac.*, 1932). I therefore begin by attacking the latter's arguments. His reasons for adopting the subjective view are of two types. He tries to show partly that some apparent difficulties in his own view are the result of certain common mistakes, and partly that the way in which the ordinary man thinks about duties implies this subjective view. The first part I think he has carried out very well, and I will, therefore, treat only the second type.

His first argument against the objective view is that since we very often do not know the situation well enough to be certain that a moral rule is applicable, and since we never can be sure that what we directly do will have the effect desired, we never know but only believe that we have duties. Consequently we cannot do a duty knowing it to be a duty, and yet we are quite sure both that we have certain duties and that we can do them because we know that they are duties. I cannot see why Professor Prichard admits that perhaps we sometimes know something about the objective situation, but insists that we never know that we can bring about a certain effect, for either we have to take the word "knowledge" in a stringent, philosophical sense in which case, as Lord Russell, among others, has pointed out in his book *Human Knowledge*, we have no knowledge at all except perhaps about our own actual sensations, or else we use the word in its ordinary sense, in which case we "know" that we can do things when it is practically certain that we can do them in spite of the possibility of throwing Cartesian doubt upon it. In this respect, then, the subjective view has no decisive advantage over the objective one, for even though common sense assumes that we can often know our duties it does not assume that we can generally be more certain about them than about other things.

This, however, is exactly what Professor Prichard tries to show in another argument. If we see a definite probability of a person meeting with disaster, and we can prevent every chance of it, we consider ourselves definitely bound to do so, and if afterwards we realize that the person would have escaped without our interfering we do not think that we had no duty. Here we are no doubt surer of our duty than of the disaster in the future, but on the other hand, the

ground for our duty is the *chance* of disaster, not the disaster itself. This objection Professor Prichard has foreseen. He says that what has obscured for us the fact that all "insurance duties" are in direct conflict with the objective view, is just the thought "that the terms 'likely' and 'probable' refer to facts in nature." Nothing has ever "probably happened." Either it has happened or it has not. The fact, which a sentence containing the word "probably" refers to, "must consist in our mind's being in a certain state or condition." I don't think this is correct. Professor Prichard seems to have confused the conception of probability with the conception "different degrees of subjective certainty." If a man throwing two dice says that the probability is equally great for both 12 and 7 to turn up any mathematician will tell him that he is wrong, but if he says that *he* is quite certain that 7 will not turn up they cannot refute him for possibly he may be certain. It is very hard to say to what facts the theory of mathematical probability refers, but surely it is not to psychological ones. Very often we talk of probability or credibility when the mathematical theory is not applicable. Even this probability, however, is non-psychological. Two historians in a discussion may be aware that their controversy only concerns the degree of credibility of a historical proposition, but nevertheless they are not discussing what persons think about it. Like many other terms "knowledge" has both a logical or epistemological sense and a psychological, and the term "probability" relates to the logical sense of the term. The probability of a proposition is something that within certain limits may be estimated in view of all the available facts about the topic, and it is something non-psychological and objective, although it is not a part of nature. Of course I do not pretend that this is a view which Professor Prichard has never heard of, but I wish to point out that his argument presupposes an epistemological theory that is very doubtful.

Evidently, then, we have to distinguish between the objective knowledge (with different degrees of credibility) available in a given situation, and our own thoughts in the situation. If Professor Prichard only meant that it is this objective knowledge and not, as Professor Ross says in his first book, the bare and perhaps inaccessible facts that are the basis of our duties, his theory would be correct though not a subjective theory, but he insists that the question of duty depends on our *thought* of the situation. Here, however, he makes a modification which renders his theory more credible. A man's duty, he says, cannot be constituted by his first opinion about the facts. He has always to "consider the circumstances fully" before deciding his further duty. The exact meaning of the word "fully" is very important. Have I done my duty when I *think* that I have considered the situation fully? Obviously not, for Professor Prichard says that

I have to do it "as fully as I can," and I can never be quite sure that further and more energetic consideration would not give me better knowledge. Perhaps we could say that we have to consider fully not only the circumstances themselves, but also the question whether we have considered them fully, but that would lead to an infinite regress. "Fully" is an objective term, and Professor Prichard's modification turns his theory into an objective one. The knowledge which is the basis of my duty is not the knowledge that I actually possess, but the best knowledge that is available to me in the situation, and that knowledge is a part of the objective situation.

It may seem that the difference between Professor Prichard's theory and the theory stated here is in its essence purely verbal, and that they would lead to the same decisions about a person's actual duties. Yet I am not convinced that it is so, for perhaps Professor Prichard means by "fully" only "a very great deal" and by "as I can" only "as I can without changing my character." He says that if we meet a man going to torture a heretic in order to save his soul we may try to convince him that he is wrong, but if we cannot change his opinion we must admit that he is as bound to inflict the torture as we are bound to try to prevent him. I do not think most people would admit this, for they would assume that his conviction was due to fanaticism. Common-sense thinking about duties no doubt very often implies that opinions which are due to the agent's bad character cannot be the reason why his acts should be approved of as duties. Thus, if I tell a person some home truths quite convinced that he needs them and some years later realize that my conviction was due to envy, I must also give up my conviction that I did my duty even though I believe that this greater self-knowledge was impracticable for me at the time. The same thing holds good when my pride forbids me to trust a good authority, and so on. In questions of duty, then, "the best knowledge available" means "available for an ideally good man" though not "an ideally intelligent one."

This leads us on to the second part of the problem. The knowledge about the facts being duly settled, is the act which really suits these facts our duty, or is the act that we think suits them? Professor Prichard does not treat this problem, and therefore I have to return to Professor Ross. He says that both acts are morally suitable, though in different senses, but the second act, i.e. the act that is morally suitable to the agent's opinion about his duty, is the act that he *really* ought to do. Later on he says that "to act in accordance with one's conviction is always, in one sense, to do one's duty." I think it is very odd to reason thus. Perhaps we can talk about "right" or "morally suitable actions" in different senses, but our duty can only be one, and we cannot be morally bound in different senses. "To

do one's duty" without any limitations must, according to Professor Ross, be "to act in conformity with one's moral conviction."

Professor Ross hastens to meet an objection. He does not suggest that an action could be right simply because the agent thinks it is so. That is impossible on epistemological grounds, for nothing can have a quality simply because somebody thinks it has that quality. The agent thinks his act is morally suitable to the supposed facts, and that makes it morally suitable to his moral opinion. He has to consider the various moral claims in the situation, but when he has decided, as honestly as he can, his conviction, right or wrong, ensures that in doing the chosen act he is really doing his duty. I don't think that this answer removes the epistemological difficulty that Professor Ross himself has pointed out in the subjective view. At best it seems very odd that the question "What is my duty" which a man has to answer when he is deciding how to act, and the question "What was my duty" which he has to answer when he has already acted, are logically quite independent. The *true* answer to the first question would be of absolutely no interest to the question about his *real* duty. When an agent, who has adopted Professor Ross's view, tries to find out his duty he must be aware that it is not his *real* duty he is searching for, but something else. He must think that whether he finds it or not he will know what his duty is.

Again, we have to ask what Professor Ross means by "prima facie duties." No doubt he thinks they are objective claims resting upon individuals in given situations. Thus when a man is in a certain relationship to other people there *is* a claim upon him, whether he is conscious of it or not. But on the subjective view it cannot be so, for according to Professor Ross "only those things are prima facie obligatory which, if there are no more pressing prima facie obligations, are actually obligatory," and we are actually obliged only when we know that we are. The claim, then, must be something that is attached neither to the situation itself nor to the consciousness of it, but to the consciousness of the claim itself. It exists only when we know that it exists, and that, as Professor Ross himself has pointed out, is impossible. In order to save the subjective view we must put things in another way. We have to drop the thought that the claim is something objective, and let it be something directly appearing in the consciousness just like a feeling or a desire. It would still of course be possible to distinguish between the claim itself and the consciousness of the claim, but the first would be a psychological entity and the second a sort of introspection.

The theory, however, must be stated more precisely. We must not confuse it with the idea that ethical judgments merely express states of mind, nor with the idea that they merely assert something about the speaker's state of mind, for it is by no means a theory about the

meaning of the word "ethical claim," but about what things have the property of being such claims. Now if the claim is thought to be a psychological quality and nothing else, the proposition "A has claim-consciousness to do the act *b*" should be equivalent to "A has a prima facie duty to do *b*," and the proposition "Everyone has a prima facie duty to do all acts which his claim-consciousness bids him" should be a tautology. That is pure naturalism and cannot be accepted. We must say that there is an ethical as well as a psychological quality, and that is the same as to say that whenever a person has the claim-quality in his mind there is an ethical fact besides, distinct from this psychological fact, namely that the person has a claim resting upon him. The psychological quality cannot be identical with the ethical one, and if the former is not a consciousness of the latter it must be connected with it as its basis. Then we could ask whether this new obligation rests upon the agent if he is not aware of it: but perhaps we can avoid this new difficulty by saying that whenever a man has the claim-quality in his mind he is also conscious of his duty to follow it. A consequence that seems rather curious is that we have to accept two different types of claim-consciousness; that which is the basis of the claim and that which is the consciousness of it, but I do not want to go into that here.

It is important not to confuse this view with pure ethical scepticism. It does not maintain that there are no real claims at all, for it is quite consistent to say that whenever a person feels such claims he is really bound to follow them. The theory would be a much exaggerated "ethic of conscience," and perhaps some people would accept it. Nevertheless I do not think it is implied in the way ordinary people think about duties, and still less could Professor Ross approve of it, for it is at variance with most of his other theories. According to it there would be only one ethical claim, viz. to follow the "voice," the "lead" of the claim-consciousness whenever it appears. A promise then could never be a *basis* for a prima facie duty, nor could a person's knowledge that he has made a promise be so. The utmost the theory allows us to say is that the consciousness of certain situations very often *causes* claim-consciousness, and that is too little.

Another awkward consequence is that a person who feels no claim at all would be a man without duties. Whenever anyone said to him "That is your duty," the sentence would be wrong. In order to avoid this we could perhaps enlarge the theory with some postulates, e.g. that persons suffering from mental diseases have no duties, and that all other people in certain situations really have claim-consciousness even when from lack of interest or self-knowledge they do not detect it. This assumption is not uncommon, but, though even Professor Westermarck makes it, I think it requires a religious background. For a person who believes that God speaks within the soul of every

person, it is natural also to believe that He says the same thing to everyone, but from a purely psychological point of view it is very hard to defend the assumption. Experience does not assure us of it, and besides we do not think that ethical truths depend on our accidental constitution. With religious men this difficulty does not arise, but in a religious system of ethics the postulate is a part of an objective theory. The basis of the obligation is not the voice of conscience but the will of God behind it, or the claim of the situation itself that God makes us aware of. In a non-religious, subjective theory it must be the subjective "claim-quality" itself that constitutes the obligation. Besides this, even if Professor Ross were to accept this, he could not accept the proposed postulate because that would remove the great advantage which his subjective view would secure. His main argument for it is "that anything that we ought to do must be something that we not only can do, but can do with the knowledge or at least the opinion that it is our duty." Now the subjective theory will allow us to say that a man has not failed to do his duty when he was not aware of it, or could not be aware of it, but if we put in the postulate we must say either that such a case is impossible or that the agent's claim-consciousness was so weak that he could not detect it, and then the postulate makes no difference at all.

Obviously Professor Ross did not have in his mind the instance of a person with no sense of duty at all when he stated his subjective view. He was thinking of persons who have to choose between different prima facie duties but whose moral insight is too small to guide them in a right way. What he wants to show is that when they have tried their best we cannot blame them or even say that they have not done their duty. Perhaps, however, we could secure this without adopting the pure subjective view with all its awkward consequences. We could admit that there are a number of different prima facie duties, all of which are actually obligatory whether the agent knows them or not, and that all claim-consciousness is consciousness of such prima facie duties, sometimes, but not always, objectively existing. That does not preclude us from stating a special prima facie duty to act in accordance with our own sense of duty irrespective of its being right or wrong. If, at the same time, we consider this latter prima facie duty so strong that it always overpowers all other imaginable prima facie duties, then we get a theory that enables us never to blame a person for having followed his sense of duty without depriving us of the right to blame him for not doing his duty when he has no sense of duty at all. Another advantage of the theory is that it exempts us from distinguishing between "duty" in different senses. What Professor Ross calls the agent's subjective duty becomes wholly objective, and what he calls the agent's objec-

tive duty becomes the duty that he would have if he had no sense of duty at all, and, at the same time, it is the act we have to point out if we want to guide his sense of duty.

Yet I do not think that this theory altogether suits the way ordinary people think about duties. Obviously not even Professor Ross himself thinks consistently that the claim arising from the agent's sense of duty without restrictions is as strong as the theory requires. His main argument for his subjective view is, as we have seen, that we cannot *blame* a man for not doing his duty when he has tried to do it though with imperfect moral insight, and very often he declares that love of duty is the highest of all motives. Sometimes, too, he seems to imply that an act done from the agent's sense of duty is necessarily a morally good act. At least it must be better than any alternative act. "So long as he (the agent) thinks of one act as being an act he ought to do, and of the other not as being an act he ought to do, we are bound to say that he will be acting better in doing what he thinks he ought than in doing what he does not think of as something that he ought to do." Later on, however, Professor Ross recognizes that the goodness of actions does not *solely* depend on the goodness of their motives, but also on the *lack* of motives which would have attracted an ideally good man. "Even action done from a sense of duty may for this reason fail to have moral goodness, may perhaps even be morally bad." So far there is no logical inconsistency, for though bad the act can still be said to be better than any alternative act. But Professor Ross illustrates the point with the following example: A nepotist A who gives a job to B "ignoring the much stronger claims of C, D, etc., may act from the thought that he ought to bestow the job on B; and so far there is an element of goodness in his action. But in so far as he is failing to be influenced by the thought that he ought to do justice to C, D and the rest, his action is a bad one; and it is easy to imagine a case in which the prima facie obligations he is failing to be influenced by are much more weighty than those he is being influenced by; and in such a case his action will be on the whole positively bad." Here Professor Ross is no longer talking about motives—for the motive of A is supposed to be his sense of duty, and it would have been just the same if he had realized the claims of the other—but about moral knowledge, and I do not think that Professor Ross would say that A really had done his duty. At any rate, A is more to blame for his incorrect moral insight than he is to be praised for his love of duty, and I think this implies not only that the moral worth of the love of duty depends on the agent's moral insight, but also that the strength of the prima facie duty to follow one's sense of duty depends on it. No doubt if we have tried in vain to alter a person's view about his duty we sometimes concede that it is his duty to follow his own conscience,

but sometimes we insist that a certain act can never be his duty irrespective of what he thinks about it himself.

Of course the salient point is that our conceptions of "conscience," "sense of duty," and so on are not purely psychological. We do not think of them as the capacity for thinking of certain characteristics, but as the power of distinguishing them in the environment. Unless a person can do that in a certain degree we do not think that he has any conscience or sense of duty at all, however much he may think about duties. Professor Ross, too, says that the sense of duty cannot "fairly be described as a hard impersonal devotion to an abstract principle in contrast with the warm outflow of love towards another person. In its typical manifestation the sense of duty is a particularly keen sensitiveness to the rights and interests of other people, coupled with a determination to do what is fair between them." This is very good, but it is possible to have this characteristic without thinking about duties at all, and it is not what Professor Ross generally means by sense of duty. Of course we can speak of different degrees of sense of duty as different degrees of moral insight, but this is not the same as different degrees of attraction towards what we think is our duty. Again, we have to distinguish between attraction toward actions as being duties and towards justice and other peoples' rights and interests. The sharp line Professor Ross draws between sense of duty and other motives, e.g. benevolence, must have this meaning. "The other good motives are attractions towards certain actions *as being of a certain character;* the sense of duty is an attraction towards them *as being right as being possessed of that same character.*" Thus the wish to promote other people's rights and interests is not to be counted as the motive "sense of duty," but as love of justice, benevolence and so on. Professor Ross says that there is a certain "affinity of nature" between the other good motives and the sense of duty, since the other good motives "include a part of the thought which is included in the sense of duty." But this must not be taken to mean that their motive power is included in the power of the sense of duty, since the latter is attached to the thought that the action is right, not to the intended results of the action which make it right. Yet Professor Ross seems to confuse these things, for his main argument for the supreme value of the sense of duty is that "while the other good desires are desires to bring into being this or that good thing, without considering whether it is the greatest good one could bring about, in conscientious action an attempt, at least, has been made to do this." This seems to imply that the supreme value is attached to the desire to do as much good as possible, not to the desire to bring about a *right* action. And when Professor Ross tries to give a picture of a "completely good" action he says that it must manifest "the whole range of motivation by which an ideally good man would be

affected in the circumstances, a sensitiveness to every result for good or for evil that the act is foreseen as likely to have, as well as to any special prima facie obligations or disobligations that may be involved —in their right proportions," but here Professor Ross says nothing about the thought of duty. He says that such a man "is responsive to all the morally relevant considerations," but this is obviously not the same thing as *to think* of them as morally relevant. Still Professor Ross seems to imply that the man, *eo ipso*, has acted also from his sense of duty.

I hope some light may be thrown on the question by the following considerations. We take an example, where only one prima facie duty is at work, e.g. when a man needs my help and it is my duty to sacrifice my own interest. I do not like the person very much but I *feel* the claim of his helpless situation weighing upon me, and this feeling tends to determine my actions. In this case I think my motive, if I help him, must be said to be benevolence, for no thought of duty at all has occurred to me. Still what I am feeling must be just the same moral claim that makes it my duty to help him, although I am not conscious of its being moral. Let us now suppose that my wish that the man shall be helped is not strong enough to move me to self-sacrifice. I have a desire corresponding to the obligation, but other desires overpower it. Now I begin to consider the situation from a moral point of view. I recognize that the claim from the helpless man is a moral claim while my own interests are morally indifferent. It is my duty to help him and I do so. Clearly my love of duty has directed me. What is the nature of this new motive? What is the object of the desire? I do not think it is the act itself as having the quality of *a* duty. My desire to do the act must spring from the thought that it is *my* duty. In practice it is no doubt very hard to separate this motive from thoughts about what other persons or God may say about me, but, if we look away from all that, there is a desire left, viz. my desire not to be a person that neglects his duties. I am not sure, however, that Professor Ross would approve of this analysis, for it seems to involve that the object of my desire is a moral quality of the act, viz. its being motivated in a certain way, not its quality of being a duty. The moral worth we have in doing our duty, we must remember, depends entirely on our motivation, and the quality of "being right," of "being my duty," which an action may have, has nothing to do with that. The situation, then, when I do an act from love of duty, according to the analysis, would be that I chose not only to do an act but choose to do it from a good motive, and that, as Professor Ross has shown, is impossible. On the other hand, a good deal of philosophical knowledge is required to see that it is impossible, and it is perfectly possible to choose an act from the idle thought of choosing a motive. Besides, most people do not reflect at all upon

the difference between "right" and "good," and it can hardly be denied that when they choose to do their duty their directing motive, very often at least, is to gain in moral perfection. This motive should more properly be called "love of one's own morality" than "love of duty."

In the unanalysed conception of "love of duty" of ordinary people, viz. the state of mind of a person, who is commonly said to love his duty, I think not only love of moral perfection is included, but also the wish to satisfy as much as possible all other claims felt in the situation. When this last motive is set up in contrast to, e.g., benevolence, the reason sometimes seems to be that the prima facie duty to which benevolence corresponds, is satisfied at the cost of other claims. The proportion of the two types of desire in "love of duty" is naturally very different in different cases.

If we want to purify the conception and take away both "love of one's own morality," and benevolence, love of justice, and so on, what would be left? It is very hard to argue about this, for the only method is introspection, but I think there is something that we may call "love of conscience for its own sake." Just as a boy may obey his father not only in order to be "a good boy," for fear of punishment, and so on, but also because he venerates his father and plainly wants to obey him, so a man can venerate his conscience and want to obey it. I do not think that this presupposes either a conscience that presents itself as a mystical voice whispering in the heart, or the thought of God. But I think that there is in the background, perhaps unnoticed, a sort of notion of a super-personal commanding will. I obey the command not because it is *my* conscience that gives it, but because the command is given *to me*. The only alternative analysis of the pure motive "love of duty" that I can think of would be that it is a love directed towards a special duty-quality, but only when that quality adheres to an imagined act which can presently be chosen by the duty-loving person himself. And that, when abstracted from the thought of gaining in moral perfection, is a very strange idea. If the desire were directed at cases of duty-quality, taken one with another, the duty-loving agent would have to consider not only his present duty but also the consequent possibilities of fulfilling future duties for himself and other people, and that is not what is meant by "love of duty." I think it is more natural to obey a command, because it is actually given, without any thoughts of further commands, than to love a quality in this way. It may be objected that the thought of a command presupposes the thought of duty if the command is thought to be morally obligatory. But that objection would miss the very point in the analysis. Of course the notion of claims or prima facie duties is quite independent of any command, and so is the idea of an action which satisfies these claims

as fully as possible. But if, with Professor Ross, we insist that this very action also has another quality, distinct from the first one, then the theory maintains that this second quality, viz. that of being a duty, is identical with "being in some way commanded."

The question we have now to face is whether or not we mean that a person who believes himself morally commanded to do an action, *eo ipso*, is commanded to do it. We must set aside all considerations of whether or not the command really exists. For at any rate most people think there are duties, and we set out from the theory that a duty is an action that is morally commanded. The pure subjective view cannot maintain that, according to common sense, the command is a psychological entity, viz. the consciousness of the command, for that would be absurd. As we have seen before, it must hold that the command always says: "Do what you believe or feel to be commanded." I do not think it is necessary to repeat the grounds which make the theory untenable. When discussing prima facie duties we saw that, in order to find out what a person A in a situation S is really commanded to do, we have to take into consideration several prima facie duties, one of which is A's prima facie duty to do what he thinks to be commanded in S, if he has any thought about that. The question was whether this last claim, when it occurs, is powerful enough to overcome all its competitors. We found that the answer must be negative. Certainly when we try to give a person A moral advice in situation S and we think that the act x is his duty, if we cannot persuade A, who insists that act y is his duty, we think that we have to consider this as a new factor in the moral situation. Sometimes, if A performs y we alter our opinion and say that it was A's duty to follow his own conscience, but sometimes we do not. What is the difference between these cases?

First we have to ask why we consider it a prima facie duty at all to obey one's own conscience. The latter expression, however, may mean at least two things. It may happen that A cannot see that x is his duty, but yet he chooses to do it knowing that his adviser's moral insight is better than his own. In one sense, then, he has not followed his own conscience, but in another sense he has, for he has done what he thought would be his duty. Of course the degree in which we think that A should follow his own conscience in the first sense, viz. his moral intuition, partly depends on what we think about his moral knowledge. A child has to trust others more than a grown-up person has to. It depends partly on the consequences for the agent's moral character which we think may arise from his distrusting his moral intuition. In any case, we often think it deplorable in itself that an agent should disregard his own moral intuition, and when that intuition has a certain strength we do not say that he

had better follow our authority unless the claims upon him to act in a different way are very urgent. When the agent already has chosen to follow his own moral intuition and has a firmly established opinion about his duty we argue in a similar way if we want to decide whether he really has chosen his duty. The reason why we consider the thought of the duty-command so venerable in itself must be that we have heard it in our own hearts as something venerable, and we presume that it makes the same impression in other people. But this cannot be the whole truth, for sometimes we think that an agent's opinion about his duty is influenced by e.g. his greed, and then we think it should not be venerated at all. That the devil can take the shape of God is an experience that is familiar not only to religious people. The agent himself can be entirely convinced that he has honestly followed his conscience, but we are aware that he is deceived by his greed. Why do we think that in such cases there is no prima facie duty for the agent to follow his opinion about his duty? Perhaps we presume that there is something peculiar in his duty-consciousness that makes it different from real duty-consciousness, and that an honest effort should reveal that to him. But this cannot be a *sine qua non* for our rejection. We simply deny, in whatever state his consciousness may be, that such an opinion can come from his conscience. As I have pointed out above, we do not conceive "conscience" as a person's thoughts about his duties, but as his sense-organ for moral claims. Perhaps we could go a step further and say that we conceive it as a unit of the good forces in a person's mind. Anyhow, a conscience is *analytically* good and therefore we believe that what it bids us do cannot be too far from the real command, even if it points out an act that is very different from the right act. Sometimes we make use of this thought as a criterion for "the voice of conscience," but it must not be exaggerated. It is not self-contradictory to say that a person's opinion about his duty comes from his conscience, and yet to maintain that he is wrong. If, but only if, we regard his opinion as originating in his conscience, we think that it makes a prima facie duty. It then depends on the strength and the degree of goodness of his conscience and of the concurring claims whether we shall think that his real duty is to follow his conscience. Some people would perhaps consider it more consistent to say that we have to choose between the two alternatives: Either we have to accept an act as a person's duty, or we have to reject its coming from the agent's conscience. Such differences in people's ethical valuations and ethical language, however, cannot be levelled by philosophy. *In any case ordinary people do not think that an agent's opinion about his duty has any power to make an act a duty, if they do not also think that his opinion originates from something good within him.*

It may also happen that a person's opinion about his duty does not originate in himself at all, but is more or less uncritically accepted from an authority, or he may be firmly convinced that he is always obliged to obey, e.g. a dictator, even when his own moral intuition says that it is wrong. His conscience then has to fight against an opinion compulsorily imposed by education and tradition. If it fails to prevail, at least in some cases, we cannot say that he has done his duty, even if we might concede that he had tried to find out what it was, and that he did what he thought to be his duty. This is the case of the Germans I mentioned before.

Our task was to state a consistent theory that suits ordinary people's thoughts about duty. Such a theory, no doubt, cannot allow us contemptuously to neglect other people's consciences when arguing about their duties. But I hope to have shown that it cannot be identical with Professor Ross's subjective view either. If I am right, his argument "that anything that we ought to do must be something that we not only can do, but can do with the knowledge or at least the opinion that it is our duty," must also be given up. It is true only if we are sufficiently good men, and love of duty alone is not sufficient.

The motive that has made Professor Ross adopt his subjective view seems to be the following: He wants to point out a way to moral security which everyone may take if he wants to, although he is aware of the fact that this morality is not the same thing as perfection. By an act of will no one can acquire love or similar virtues, but the highest virtue is love of duty and everyone of us can by an effort live up to the principle of always doing our duty, and then no one can blame us much. This presupposes that moral insight cannot be a necessary condition for some degree of morality, but it seems also to presuppose that the object of our love really is our duty and not a distorted picture of it. No doubt this is a very common thought, and it is a great merit of Professor Ross's to have shown its consequences, but I think we had better give up this common thought. Without something within us that is moved by the claims of our fellow-creatures, we have neither moral insight nor moral goodness in any degree. Certainly those two are not identical, but neither are they independent, and sometimes lack of insight itself is blameable. This claim-corresponding entity within us that makes us aware of our prima facie duties we cannot procure by a mere effort of will. But the only conclusion possible seems to be that we cannot procure moral goodness entirely by our own will. Its occurrence is always dependent in a certain degree on something else than our will to possess it. We may ascribe the existence of this other factor to "chance" or to "the grace of God."

GREEN, ROUSSEAU, AND THE CULTURE PATTERN

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THERE are, I think, three distinct senses in which Rousseau uses the term "general will." He means by it, as the nineteenth century idealists used to point out, something very like Kant's "good will," which all men have in common and which cannot conflict with itself. But he also means, quite as often, the Utilitarian compromise, the mean between divergent interests which takes account of all of them and satisfies as many as possible. And, thirdly, he means something like the "culture pattern" of the modern anthropologists. I want to show that Green inherits this ambiguity, and that his argument in the *Principles of Political Obligation* is plausible only because he does not distinguish between these three meanings of "general will."

By this time the first meaning may, I think, be taken for granted. The second has been remarked by some writers on Rousseau; but it may be as well to cite a passage in which Rousseau does use the term in this sense.

Consider the first chapter of Book III of the *Social Contract.* Rousseau is making the point that the liberty of the subject diminishes with the size of the state. If the population increases from ten thousand to a hundred thousand, "the condition of the subject undergoes no change, and each equally is under the whole authority of the laws, while his vote, being reduced to one hundred thousandth part, has ten times less influence in drawing them up. . . . From this it follows that, the larger the State, the less the liberty. . . . Now, the less relation the particular wills have to the general will, that is, morals and manners[1] to laws, the more should the repressive force be increased. The government, then, to be good, should be proportionately stronger as the people is more numerous."[2]

Now if the general will is simply the good will, the desire to do what is right, why should it become weaker as the population grows larger? And why should it differ from the general will of the magistrates? Rousseau seems to suppose that every corporate body has its own general will, different from every other; whereas the good will should be identical in all who possess it.

It is fairly clear that Rousseau is thinking here of a reconciliation of different private interests. If two men have to live together, they

[1] The French is *moeurs.*

[2] Rousseau, J. J., *The Social Contract.* Tr. G. D. H. Cole. London, Dent, 1920 (Everyman's Ed.), p. 51.

will work out some common way of life that will satisfy both of them; if a third comes into the household, his tastes and habits will have to be considered, and adjustments made. The more people, the more adjustments and the less the way of life finally arrived at will reflect the personal tastes (the *moeurs*) of any one of them. In arriving at the common way of life, everyone should be considered (every vote must be counted), but, once it has been arrived at, there is an obligation on each member to conform to the compromise reached.

Now what is the corporate will of the magistrates? Since the task of the executive is to apply the general laws to particular cases, since it is to be guided by the general will of the community and not by personal desires, the corporate will of the magistrates must be concerned simply with ways of doing this—i.e. with administrative procedures. The procedure that will suit one may not suit another. Again a compromise must be worked out; and again, the more magistrates there are, the less the procedure will suit any one of them. That is why it is more irksome to be one cog in a large administrative machine than to be in sole charge of a small one. Compare the civil servant with the headmaster of a small private school. The headmaster can work out procedures that will bear the stamp of his own personality. This makes for efficiency; but it may also make for deviations from the purposes which the administration is intended to serve. That is why Rousseau objects to monarchy, although he acknowledges its efficiency.

Rousseau distinguishes, then, between (*a*) the private interest of each individual and (*b*) the compromise between them. This must in the first place be adapted as far as possible to each (*a*) (a^1, a^2, etc.) but it then becomes the duty of each individual to adapt his particular (*a*) to (*b*). Thirdly, there is (*c*) the corporate interest of the magistracy—i.e. the most efficient and workable mode of procedure. This must be worked out with regard both to (*b*)—it exists simply to implement (*b*)—and the (*a*)s of each magistrate, so far as these affect them as magistrates.

Now let us consider the sense in which "the general will" is equivalent to "the culture pattern."

In the *Discourse on Inequality* Rousseau adopts the concept of the state of nature, but he treats it rather more realistically than either Hobbes or Locke. For Rousseau had grasped the fundamental point that man in a state of nature would be quite a different animal from man as we know him. The natural man of Hobbes, jealously seeking power over his fellows, and the natural man of Locke, pursuing his own ends within the limits of the law of nature, are alike the product of society. The true natural man, if he ever existed (and Rousseau was not at all certain that he did) must have been solitary, unmoral, and, above all, independent. He went his own way and left others to

go theirs. His desires were limited to those which he could gratify by his own efforts without having to rely on others. He simply did not have most of the passions which motivate civilized men, neither the bad ones, like vanity and luxuriousness, nor the good ones, like enduring love for friends and family.

Man, then, is moulded by society. Rousseau was, of course, inclined to think that he might have been happier if society had never meddled with him. "There is only one man," he says in *Emile*, "who gets his own way—he who can get it single-handed; therefore freedom, not power, is the greatest good."[1] It follows that man in society can never be free. That is the meaning of the famous opening sentence of the *Social Contract*. And Rousseau proposes not to give us back our lost freedom, which is impossible, but to show us how to make our bondage tolerable.

But if man is moulded by society, we must modify the concept of the general will as a compromise between particular interests. We arrived at the compromise by considering the pre-existing desires of each individual. But once he accepts the compromise, the individual will become conditioned by it. The new way of life, once it becomes habitual, will be what he desires. Need we, then, take account of his original desires at all? It is not a question of what he wants now, but of what he may come to want.

Indeed, we may go further. In so far as the individual is a member of society, he cannot help being influenced by the social norms. He is influenced by them even when he struggles against them. His best chance of obtaining peace of mind is to accept them, to will them whole-heartedly, since he is bound to will them half-heartedly in any case. In this sense the social norm may be called, without much straining, the real will of the individual. This may be part of what Rousseau means by saying that, when a popular vote goes against me, "this proves neither more nor less than that I was mistaken, and that what I thought to be the general will was not so. If my particular opinion had carried the day I should have achieved the opposite of what was my will; and it is in that case that I should not have been free."[2]

Does it follow that we should always accept the norms of the community, whatever they may be? It does not, unless three conditions are observed. First of all, we must remember that man is not, after all, entirely the product of society. Adaptable though he is, he is still subject to biological needs; and the norms must be "natural" in the sense of not doing too much violence to these. Secondly, the norms must not kindle desires and frustrate them at the same time, as when a whole society seeks luxuries which only a

[1] Rousseau. J. J., *Emile*. Tr. Barbara Foxley. London, Dent, 1933 (Everyman's Ed.), p. 48.

[2] *Social Contract*, p. 94.

few can obtain. Thirdly, the desires kindled in each individual must not be such that in seeking to gratify them he thwarts the similar desires of other individuals. All this comes out fairly clearly in *Emile,* where Rousseau is describing the kind of man that society ought to develop. It is the third condition that leads him to identify the general will with public spirit and so with the good will.

We are now, I think, in a position to summarize the three leading ideas in Rousseau's concept of the general will.

1. He begins, like Hobbes, with the problem of enabling men to pursue their individual interests in co-operation without conflict. Rousseau rejects Hobbes' solution, of appointing a supreme arbitrator, whose decision is final, in favour of a common rule which all agree to accept. And this suggests that the common rule should be a compromise between individual interests. But the term "general will" may mean either what is willed or the willing itself. What is willed is the compromise between interests; but this does not mean that the conative impulse is furnished by self-interest. At times Rousseau does seem to say this; but in general we must suppose him to mean that the individual is to recognize the justice, and not merely the expediency, of sinking his own interest in the compromise.

2. But society is not merely a device for enabling individuals to attain their private ends. As a result of living in society, men develop new passions and new desires. Since they cannot satisfy these unaided, they are never entirely free; but they can attain something like freedom if they limit their desires to those which the institutions of the society will satisfy. In so doing, they will the norms of the society, which form the content of the general will in this sense; on the conative side, the general will becomes: (*a*) the largely unconscious mechanism by which such norms condition our desires; (*b*) a conscious willingness to accept the norms as our standards.

3. But this will not lead to peace of mind unless the norms of society conform to the conditions already described, particularly the last of them. We may say, then, that the general will wills only those institutions which do conform to them. On the conative side, it becomes the desire to see those conditions realized. And this can be regarded as equivalent to the good will.

It is easy to see why these three become confused. The first merges into the third once we separate justice from self-interest; and the line between the second and the third is not easy to draw. Nevertheless, the difference comes out clearly if we examine the proposition: we ought to obey the laws when they conform to the general will. Obviously it matters a good deal whether this means: (*a*) we ought to obey the laws when they represent a compromise between conflicting interests; (*b*) we ought to obey the laws when they conform to the community mores; (*c*) we ought to obey the laws when they

are likely to sharpen the individual's perception of his duty to others.

Green, of course, adopts the third position; but I think it can be shown that many of his arguments depend on interpreting the general will in one of the other senses. I shall take two of the themes developed in *Political Obligation*: his treatment of sovereignty, and the contention (quite central to his general position) that the general will as manifested in one individual can never conflict with the general will as manifested in another. (It may be noted that Green uses the term "common good" for the content of the general will—what is willed—and "general will" itself for the apprehension of the common good and the resulting conative impulse.)

First, sovereignty. Green begins by contrasting Austin's view of sovereignty with Rousseau's. For Austin the sovereign is "a determinate human superior, not in a habit of obedience to a like superior," who receives "habitual obedience from the bulk of a given society." For Rousseau sovereignty resides in the general will. The two views can be reconciled, Green suggests, by asking why the bulk of society is prepared to render habitual obedience to a determinate superior. The answer is elaborated in the lecture entitled: "Will, not Force, is the Basis of the State." No sovereign rules entirely by fear. " . . . the great despotic empires of ancient times . . . and modern Empires in the East were in the main tax-collecting institutions. . . . In a certain sense the subjects render them habitual obedience, i.e. they habitually submit when agents of the empire descend on them for taxes and recruits, but in the general tenor of their lives their actions and forbearances are regulated by authorities with which the empire never interferes—with which probably it could not interfere without destroying itself."[1] These authorities, he adds, are the exponents of customary religion and of the community mores in general.

Green draws the conclusion (at least in one passage: he does not say this quite consistently) that any sovereign who secures habitual obedience may be presumed to rule in conformity with the general will, or the common good. There can be no sovereign *de facto* who is not so *de jure* either in the strict legal or in an extended (moral) sense of "jus."

"The monarch's newly established supremacy may be in conflict with laws that were previously in force, but he has only to abolish those laws in order to render it legal. If, then, it is still to be said to be not *de jure*, it must be because *jus* is used for something else than law or right established by law; viz. either for 'natural right' . . . or for certain claims which the members of the subject community

[1] Green, T. H., *Lectures on the Principles of Political Obligation*. London, Longmans, Green. 1941, p. 99.

have come to recognize as inherent in the community and in themselves as members of it, claims regarded as the foundation of law, not as founded upon it, and with which the commands of the sovereign conflict. But even according to this meaning of *jus* a sovereign in the strict Austinian sense that is not so *de jure* is in the long run an impossibility. 'Habitual obedience' cannot be secured in the face of such claims."[1]

Now we may agree that even the most despotic government has to concern itself largely with simply keeping the social machinery turning, with seeing that the petty routines of daily living are not too violently interrupted. There may be great social changes; but the chances are that the traffic rules and the laws against petty theft will still be enforced, and that the shops and the buses and the telephone exchange will continue to function. And we may agree, too, that the citizen will render habitual obedience because he feels that it is desirable that these social arrangements shall continue. We may even admit that one element in this feeling may be his conviction that it is his duty to assist the smooth running of society. But it is only one element, and there are at least two others: self-interest and habit. The citizen accepts the existing social arrangements because he feels that his own interests are served by them; and he accepts them because he has been conditioned to take a particular way of doing things for granted. Green may say, plausibly enough, that "habitual obedience" is some guarantee (it is far from being a complete guarantee) that the ruler has not departed too far from the community mores; but he cannot say, as he wishes to say, that this means that his rule is for "the common good" in his restricted sense of the term.

Again, Green argues that the concept of a common good plays its part even in the formation of institutions which have arisen through the selfish motives of particular men. Napoleon was motivated, no doubt, by a passion for self-aggrandisement. But this passion itself, Green says, was governed, and took the form it did in him, by the operation in himself and in his fellows of certain social ideals. Napoleon could glorify himself only by making France great, and even this had to be represented, at least, as the means of delivering oppressed peoples. In taking this semblance "it to a great extent performed the reality." And Green adds: "It is thus that actions of men, whom in themselves we reckon bad, are 'over-ruled' for good."[2] There is nothing supernatural about this over-ruling: it results purely from the operation of social forces.

The valid point here would seem to be that "selfish" motives are also "social" in the sense of having cultural causes, and of operating in society. Napoleon's ambitions were influenced by the prevailing

[1] *Op. cit.*, p. 106. [2] *Op. cit.*, p. 134.

nationalism, which he himself, as a man of his time, could hardly help sharing; and even if he did not share it, he had to take account of it. Green may say, then, that selfish motives are "over-ruled" by the culture pattern; but it does not follow that they are over-ruled for good. Even if we agree that generous feelings play a part in the nationalist spirit, there are others that are not generous; and in general it would be just as reasonable to argue, as the Anarchists do argue, that individual motives are over-ruled for bad.

What Green should have said about sovereignty and the general will is, I suggest, something like this: (*a*) Habitual obedience to a determinate human superior may be regarded as evidence that his authority is exercised in conformity with the culture pattern—i.e. does not depart too violently from accepted customs and institutions. (*b*) These customs and institutions are accepted partly from habit, but also partly because the citizen feels that they represent a compromise between his own interests and those of his fellow-citizens. (*c*) One factor in his acceptance may be his realization that he *ought* to be prepared to accept such a compromise instead of insisting on his own interests simply, without regard to those of others. Whether (*c*) is to be interpreted in terms of Kant's "good will" or not is a matter of general ethical theory. My point is simply that Green puts all the emphasis on (*c*) and virtually ignores (*a*) and (*b*). But habitual obedience is very poor evidence that the edicts of the sovereign conform to the individual's sense of duty; they may be accepted, mainly or even entirely, because of habit or self-interest.

Now let us consider the contention that one man's pursuit of the common good can never conflict with another's. Green's case is at its strongest when he comes to deal with the family. "The foundation of any family life, in the form in which we know it, implies that upon the mere sexual impulse there has supervened on the part of the man a permanent interest in a woman as a person with whom his own well-being is united, and a consequent interest in the children born of her."[1] Now "a person with whom his own well-being is united" means, of course, more than a person whose co-operation is necessary to his well-being. It implies sympathy in the sense of rejoicing in her pleasures and sorrowing in her woes. And it is true enough that people do, for example, feel proud when their children are successful, ashamed when they are not. They do regard their own good as bound up with their children's. There is a sense in which the child's good just is the parent's good. Green would say that it is only when this state is attained that the common good has been fully realized. It is through membership of a community that this kind of sympathy becomes possible. To say that man is a social animal is, for Green, to say that he is capable of entering into this

[1] *Op. cit.*, pp. 233–4.

kind of relationship with his fellows. And to develop this capacity is, in the last analysis, the purpose of the State and the sole right of the individual.

But, even if we consider only the family, it is hardly true to say that this identity of interest is its sole purpose. And this applies *a fortiori* to other associations. By "realizing himself," if he were to use that term, the ordinary citizen would not mean simply realizing his capacity to identify his interests with those of his fellows. He would say that his aspirations towards (e.g.) health, comfort, an interesting life, intellectual development, have claims of their own (are good in themselves) and are not merely the conditions of identifying oneself with other people. Green denies this; but his denial depends, I think, on the ambiguity of the term "common good." The individual develops these aspirations as a result of his membership of society, and so shares them with the other members of society: in that sense they are common to him and them. He can only attain them through co-operation with others; and this makes it plausible (though I doubt if it is true) to say that his right to attain them depends on his recognition of a similar right in others. We can put this, if we like, by saying, with Green, that the foundation of a right is "capacity on the part of the subject for membership of a society, for determination of the will, and through it the bodily organization, by the concept of a well-being as common to self with others."[1] But the "well-being" is "common" in the sense that the culture is common to all who participate in it, or in the sense that a compromise between interests is common—i.e. it provides a common machinery by means of which several individuals may each obtain his private end (or part of it). Participation in a culture, or willingness to accept such a compromise, may either of them be called "capacity for membership of society." It may also happen that membership of society will develop the kind of identification of interest sometimes seen in the family. It may even be that some capacity for such identification is necessary before co-operation can be successful. And this identification of interest can also be described as "the concept of a well-being as common to self with others." But it is clear, I think, that the meaning of the phrase has shifted.

If I have no rights except to the common good, and if the common good can never be in conflict with itself, it follows that rights can never conflict. Green is put to some shifts to maintain this. Whenever rights seem to conflict, he has to say either that there is no real conflict or that they are not really rights. He takes the first course in dealing with property, the second in dealing with compulsory education.

[1] *Op. cit.*, pp. 155–6.

Compulsory education, Green admits, does seem at first sight to be an interference with the parents' "spontaneity"; and spontaneity is necessary if the capacity to participate in the common good is to be developed. But we interfere with the parents' spontaneity in order to increase the child's chances of developing it. This looks like a clear conflict of rights: we deny the parent the conditions of the good life in order to provide them for the child. But Green will not admit this.—"The answer to this objection is, that a law of compulsory education . . . is from the beginning only felt as compulsion by those in whom, so far as this social function is concerned, there is no spontaneity to be interfered with."[1]

But when he comes to property, Green is not prepared to argue in this way. "The rationale of property . . . is that everyone should be secured by society in the power of getting and keeping the means of realizing a will, which in possibility is a will directed to social good. Whether anyone's will is actually and positively so directed, does not affect his claim to the power." The spontaneity of the property-owner is apparently in a different category from the spontaneity of the parent. "It is not then a valid objection to the manner in which property is possessed among us, that its holders constantly use it in a way demoralizing to themselves and others."[2] Green does then go on to say that the right to property may be deemed unjust "when the possession of property by one man interferes with the possession of property by another"; but this condition will only be fulfilled, he thinks, if it can be shown that freedom in the use of property necessarily leads to the existence of "a proletariat, nominal owners of their powers of labour, but in fact obliged to sell these on such terms that they are owners of nothing beyond what is necessary from day to day for the support of life."[3] And he is content to deny that this is a necessary consequence. The free use of property will, he admits, result in great inequalities; but there is, in the industrial system, no inherent obstacle to the possession by everyone "of such property as will at least enable him to develop a sense of responsibility."

I am not concerned here with the economic questions. The point is that Green will sometimes maintain that a right which is used to demoralize oneself and others cannot be a real right; at other times he is not prepared to interfere with "spontaneity" unless the demoralization of others is quite complete. On the same grounds, he might have argued that compulsory education is not necessary, since the child will always have *some* opportunity to learn about the world and to "develop a sense of responsibility."

The difficulty comes out clearly in Green's treatment of war. It must surprise many readers to find that the chapter headed "The Right of the State over the Individual in War" hardly discusses the

[1] *Op. cit.*, p. 209. [2] *Op. cit.*, p. 220. [3] *Op. cit.*, p. 224.

question whether the State has such a right, but is chiefly concerned to prove (what would seem to need no proof) that war is an evil. But this is a real difficulty for Green. For in war you have citizens on either side sacrificing themselves out of genuine devotion to what they conceive to be the common good. It is true that this clash of virtuous motives results in suffering; but suffering is not an evil in itself. Nothing is bad but the bad will. Green concedes that war is not properly called "mass murder," since the soldier is not acting with malice toward the enemy nor in order to gain his own ends. Nor can we say that the instigator of the war is guilty of murder, since "when a war 'breaks out,' though it is not to be considered, as we are too apt to consider it, a natural calamity which could not be prevented, it would be hard to maintain that the sole cause lies in some definite volition on the part of some assignable person or persons, even those who are most to blame."[1] Nevertheless, Green concludes, war is an evil, because: (*a*) it is a violation of the right to live of the man who is killed; (*b*) among the mixture of motives which caused it, some are bad.

But how can Green maintain (*a*), since the right to live, like all other rights, is reducible to the right to the conditions of the good life, to whatever is necessary to enable him to be "moralized"? It would seem that the soldier who sacrifices himself for his country has already been quite effectively moralized. Green is driven back, then, on the second argument. It is only through the intrusion of bad motives on somebody's part that the sacrifice becomes necessary. It is not a necessary result of the existence of nations that they shall conflict. If nations confined themselves to their proper function of creating and preserving the conditions which make the good life possible, there would be no conflict.

But this would seem to mean little more than that, if we were all perfect, if we all made the best use of the conditions of the good life, they could never conflict. If the conditions of the good life include freedom to make decisions, to make one's own mistakes, then it is by no means certain that that freedom, even if it is honestly used according to the best lights of the individual, may not conflict with the freedom of others. On Green's own showing, it seems reasonable to conclude:—(*a*) that national sovereignty is necessary to create the conditions of the good life (*b*) that, given national sovereignty, nations may, even with reasonable good will on both sides, come into conflict. To say that this happens only because there are unworthy motives operating somewhere does not really dispose of this possibility. Similarly, if property is necessary to the development of the individual, and if this includes the freedom in the use of property that leads to inequality, then it seems likely that

[1] *Op. cit.*, p. 161.

possession of property by one man will conflict with its possession by another.

Even if we concede, then, that the sole right is the right to be "moralized," Green has not succeeded in showing that rights can never conflict. But my main point has been that it is only because of an ambiguity in his concept of the general will and the common good that Green is able to argue that this is the sole right. It is one thing to say that individual rights take on a specific form because of the aspirations which the individual develops as a member of society; another to say that they can only be satisfied in society through a compromise which involves a readiness to recognize the claims of others; and quite another to say that this reduces all rights to a right to be "moralized."

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PHILOSOPHICAL SURVEY

GERMAN PHILOSOPHY

HUSSERL'S resurrection is the most significant event of the moment. The Husserl Archives in Louvain which possess practically his whole literary remains, including 30,000 pages of autographs, have started with the publication of *Husserliana*, three volumes of which have so far appeared, viz. I. *Cartesianische Meditationen*, II. *Die Idee der Phänomenologie*, and III. *Ideen zu einer reinen Phänomenologie* I (Nijhoff, The Hague, Guilders 10; 3.90; 20). The first volume consists almost exclusively of *Inedita*, i.e. of an attempted reconstruction of the four lectures delivered at the Sorbonne in 1929, Husserl's extended elaboration of these lectures, a résumé of them, and lastly of some notes on them by Professor Ingarden; the second publishes a course of lectures, given at Göttingen in 1907, and the third republishes the *Ideas* with corrections and notes by Husserl. This excellent and probably final edition will make a reassessment of his work possible. The early lectures are interesting because they reveal his paradoxical attitude to science. He protests against the positivist interpretation of science, in which philosophy becomes totally dependent on science and has nothing to do but either to synthesize its results (Comte), or to analyse its logical presuppositions (Neokantianism) or its language (Logica lPositivism). He tries to rediscover a specific autonomous region for philosophy. He formulates the antithesis to Positivism, namely that pure philosophy should be completely independent of science. disregard its results and methods, move in a completely new dimension, and use totally new starting-points and methods; nevertheless, it should be *the* universal and, in a radical sense, exact science. This is his *πρῶταν ψεῦδος*. Philosophy can neither be completely independent of science, nor can it be an exact (*strenge*) science. It stands in a relation of interdependence to science. Husserl offers the most interesting example of a first-rate philosopher who, through a complete lack of common sense, comes into opposition to the "natural" standpoint in and outside science and whose standpoint and "eidetic" science thereby become "unnatural." It is understandable that the French audience was surprised and puzzled (*dérouté*) about his *Méditations cartésiennes*, about the transformation of Descartes' concrete *moi-même* into an abstract Kantian transcendental *Ego* or into a consciousness which is the consciousness of nobody and nevertheless claims to contain the conditions of all experience and of all possible sciences. These meditations contain a theory of our knowledge of other selves which becomes fantastically complicated for the simple reason that in this form the problem is a pseudo-problem. But though Husserl failed in his attempt to become the Descartes-Kant of our time, he made most important contributions to semantics and logic. For this reason his book *Erfahrung und Urteil* (Claassen and Goverts, Hamburg) may be recommended. Husserl maintains that every judgment, whether a truth of reason or a truth of fact, must be based on "pre-predicative evidence." He therefore gives a most subtle and rich analysis of "pre-predicative experience." Here he is most interesting and, in principle, right. There exists, e.g., certainly a pre-logical or pre-predicative negation, but whether it arises from a frustration of expectation is another question. The book concludes with a criticism of Hume's theory of probability.—To what different uses phenomenology can be put, may be illustrated by two of Husserl's pupils; first, by

his former assistant, the ill-fated Edith Stein, a Jewess converted to Catholicism and a Carmelite who, absurdly, found her death in Hitler's gas chambers. A bulky volume of hers, *Endliches und Ewiges Sein* (Herder, Freiburg), has just been published. Representing a synthesis of Thomism and Phenomenology, it will be of special interest to Thomists. In opposition to Heidegger, it is maintained that temporal being does not represent perfect reality, but merely a progressive realization of essential possibilities. Whereas Max Scheler believed in an alleged eidetic intuition of the devil, Edith Stein applies the same device as a basis for a theory of angels! In *Bios und Psyche* and *Naturwissenschaftlich-Metaphysische Perspektiven* (Claassen and Goverts, Hamburg), Mrs. Hedwig Conrad-Martius applies phenomenology to natural philosophy. She tries to show, in a rather speculative manner, that the natural sciences, especially physics and biology, in their experimental and theoretical work, are naturally faced with metaphysical problems.

In Catholic circles Husserl's influence seems to be considerable. Two new books, devoted to ontological problems, confirm it. August Brunner in *Der Stufenbau der Welt* (Kösel, München) wishes, like the Existentialists, to rescue the person, but unlike them, on the basis of a hierarchical ontology. He protests against the separation of soul and body, of "subjectivity" and "objectivity," and holds that man, with his body embedded in Nature, marks the transition from the one to the other. Otto Janssen in *Seinsordnung und Gehalt der Idealitäten* (Westkulturverlag, Meisenheim) studies "ideal beings" (*Idealitäten*) without asking whether there are such things.

A completely different aspect opens up with two books by Hermann Friedmann, *Die Welt der Formen*, which first appeared some twenty years ago, and *Wissenschaft und Symbol* (Biederstein Verlag, München) Paralleling Professor Price's distinction between Visual Philosophers and Tactual Philosophers, Friedmann distinguishes between *Optik*, which includes acoustics, and *Haptik*, but connects their difference at once with the distinction between Euclidean geometry and topology. He maintains that modern physics from Galileo was essentially tactual, but he prefers the visual world in which *Gestalten* form the primary data and which is said to be richer and, in a certain sense, more fundamental than the tactual world. Every *haptic* proposition may be translated into an *optic* proposition, but not *vice versa*. Paradoxically, and as I think incorrectly, he holds that Kant's theory of space and time is purely tactual and ought therefore to be supplemented by a visual theory. It is a sort of Goethean morphological idealism which attempts to replace the mathematical notion of magnitude (*Grösse*) by the morphological term *Gestalt*. This implies, on the one hand, the old idea, expressed already by Schelling, that biology is more fundamental than physics, and on the other hand, the most interesting suggestion that a new mathematics, a *Gestalt*-mathematics, should be developed. Eddington's *Fundamental Theory* is said to contain the germs of such a discipline, and Lancelot Whyte's *The Unitary Principle in Physics and Biology* is quoted as pointing in a similar direction. These books are rich in vision and stimulating, but more extensive than intensive. Poets also may be either prevalently visual or tactual, e.g. Goethe was a visual poet and Herder a tactual poet. This is well brought out in a penetrating study by H. A. Salmony, *Die Philosophie des Jungen Herder* (Vineta Verlag, Zürich) who rightly stresses the fundamental importance of Herder's philosophy of language for his aesthetics, philosophy of history, and philosophy of religion.

I should like to draw special attention to the excellent critical edition of *Johann Georg Hamann, Sämtliche Werke* (Herder, Wien), especially to vol. 2, which assembles his whole philosophical, philological and critical production between 1758 and 1763, i.e. of the period following his return from London.

Hamann is a most difficult and obscure writer of great originality. The English reader would be well advised to use Walter Lowrie's pamphlet *Johann Georg Hamann* (Princeton Theological Seminary) as an introduction to the chief items of the second volume, notably the *Socratic Memorabilia*, the *Clouds*, and the *Crusades of a Philologist*. Hamann was a friend of Kant, and the *Socratic Memorabilia* mark the beginning of his dialogue with Kant, a reaction not so much against Kant's philosophy as against his bourgeois attitude and advice.—Arnold Geulincx' *Ethik oder über die Kardinaltugenden* (Richard Meiner Verlag, Hamburg) is a translation of the first treatise of his ethics, *De Virtute et primis ejus proprietatibus*. Surprisingly he proclaims *diligentia* as the first virtue, but the German translation *Fleiss* as well as the English "diligence" are misleading, for he does not refer to "persistent effort or work" but to the "persistent attention to the voice of reason" consisting of (1) an aversion from the external world and (2) a "conversion" to the internal voice. —Two new booklets by Karl Kerényi, whose work was extensively reviewed in PHILOSOPHY, 1949, pp. 351 ff., have reached us, *Labyrinth-Studien* and *Pythagoras und Orpheus* (Rhein-Verlag, Zürich). The last one, already in its third edition, will be of interest to classical scholars; it discusses the difficult and obscure problems of Orphism and Pythagorism and the specifically Greek form of the doctrine of the migration of souls.

J. E. Salomaa in his *Philosophie der Geschichte* (Turku, 1950) interprets history as the history of the objective mind and advocates a world-state which, he holds, will either be achieved by the United Nations or be brought about by a third world war. This would mark a decisive step in human development and in the liberation of man.—The booklet of the well-known anthropologist Richard Thurnwald *Der Mensch geringer Naturbeherrschung* (de Gruyter, Berlin) deserves attention, partly because the evolution of primitive man is described as an "ascent between reason and madness," and partly because it contains much interesting material concerning primitive language, thought and mentality.—Gerhard Leibholz' pamphlet *Staat und Gesellschaft in England* (Mohr, Tübingen) advocates the interesting, but debatable thesis that in Continental political theory the state prevails whereas in British political philosophy society predominates. There is some truth in this assumption; but it would seem to be more correct to say that in this country the spheres of society and of the state are not so sharply distinguished as on the Continent, and that in some Continental theories, like Marxism, society has primacy.

Last but not least Albert Schweitzer's spiritual autobiography *Aus meinem Leben und Denken* (Richard Meiner, Hamburg) must be mentioned. It represents an elaboration and transformation of the report on his literary work first published in volume seven of *Philosophie der Gegenwart in Selbstdarstellungen*. Schweitzer is one of the very few great personalities who has found a solution to the problem how to become a torchbearer of Light and Reason in an age of declining civilization. He declares himself to be in complete opposition to the spirit of the age, especially to the debunking of thought and to the prevailing scepticism. "I have the boldness to tell the present generation that it should not believe to have finished with rationalism because traditional rationalism had to give way to romanticism and *Realpolitik* which dominates our spiritual as well as material affairs." It is a defence of reason, albeit of a very specific sort, i.e. of the imperative "think for yourself!" and of "elementary" thought which, animated by the reverence for everything alive, responds to the challenge of the time.—The *Zeitschrift fur Philosophische Forschung*, V, 3 publishes a noteworthy paper by the late Alfred Kastil, "Franz Brentano u. die Phänomenologie." F. H. HEINEMANN.

NEW BOOKS

The Philosophical Predicament. By WINSTON H. F. BARNES. (Black, London, pp. 184. Price 10s. 6d.)

This book is a systematic examination of the work of what is conveniently called the Analytic School in this country and of the predicament to which their efforts have led. The predicament, as Professor Barnes points out, is not entirely new, as there have been earlier attempts to abolish philosophy by philosophizing, nevertheless there are new features and new lessons to be learned. He takes recent developments as beginning with Professor G. E. Moore, whose aim was to defend what common sense takes to be obvious truths against the philosophers, whose sophisticated theorizing makes out such truths to be mere "appearance" and the "real" world something quite different. This is a laudable aim, but it has been pursued by a method of analysis which can produce paradoxes just as sophisticated as those of the idealists. Moore is found to be using two unrelated principles, a Canon of Commonsense and a Principle of Analysis. The difficulty about the first is that, when common-sense beliefs come to be formulated, there is no way of testing their genuineness and they have to be supported by concepts of the kind objected to. In the hands of Lord Russell analysis has lent its aid to far more "philosophical" purposes than Moore ever intended. Here professor Barnes distinguishes Logical and Philosophical Analysis. The first is a generalized form of the old practice of definition. By its means some traditional arguments have been shown to rest on verbal confusions implicit in ordinary language. There is no objection to this method, but it can do no more than show that arguments are erroneous; it cannot show that the doctrine based on them is false. Philosophical analysis has to be brought in for this second task. Its practice has led to "pretending to talk platitudes while in fact conveying speculations of the widest scope" (p. 65). Russell, and apparently Moore also, presuppose "a metaphysic of simple elements" to which a good many objections can be made. A selected, reduced vocabulary is used which is designed to avoid the old metaphysical concepts but produces in the end something very similar; for the really simple statements required by the metaphysic of simple elements are not to be found in common speech but have to be devised by the philosopher. These methods used by Moore, Russell and their successors have produced a variety of views and some confusion as to what is meant by "knowledge," "belief," "certainty," "probability." There is also confusion as to whether philosophical analysis "clarifies" while confirming common sense, or "corrects" it, therefore contradicting it in some respects.

Professor Barnes goes on to discuss the special doctrine of those successors of Moore and Russell, the Logical Positivists. For the most part he examines the work of Professors Wittgenstein and Ayer, but takes account of others too. Logical Positivists often turn aside criticisms of the better known published statements of their school by saying that these things were said in the 1930's, but in the meantime they have been revised and incidental errors corrected in the course of private discussions and in more esoteric writings; and by claiming that their method is the permanent, characteristic and important feature of the school, not this or that conclusion. Professor Barnes's criticisms are not to be turned aside so easily as it is the method which he attacks (indeed the same is true of Weinberg's *Examination of Logical Positivism*, 1936, directed against the work of the Vienna Circle). In any case, it is only too clear that the

final liquidation of metaphysics of which Carnap, Schlick and Ayer boasted in the 1930's has not come about, and that instead they have produced their own brands of metaphysics.

Professor Barnes says: "They [the logical positivists] are the dogmatic theologians and heresiologists of the Orthodox Church of Natural Science. All clear language is scientific language. All scientific language can be referred to *actual* sense-data for its formulation, provided we understand the logic of the scientific language. The true role of philosophy is, as the handmaid of science (*ancilla scientiae*), to reveal the logical syntax of language. To do this is at the same time to show that metaphysics is meaningless, poetry is nonsense, and a great deal of history is pure invention" (p. 101). He then very aptly quotes a Bishop of the 4th century who takes the same view of metaphysics, poetry and history. The passage quoted sets out their programme. The performance has been different.

The central doctrine of logical positivism is that meaningful statements are either analytic or empirically verifiable and that alleged empirical statements have no meaning apart from their verification. Professor Barnes discusses briefly but adequately the paradox of this principle of verification; borrowed from Pragmatism, only at home in that system of metaphysics and producing such highly metaphysical conclusions as that historical statements, though apparently about the past, are really about the future. The principle is so paradoxical that even its most fervent admirers are busy watering it down.

Besides this central positivist doctrine the logical positivists at first maintained also: (1) Behaviourism, that any statement about a person (other than the speaker) refers only to the behaviour of the material thing as we call his body; (2) Phenomenalism, that statements about material things refer only to the immediate data of sense which are the exclusive private property of the percipient; (3) Logicism, which holds that deduction and induction are the only rational procedures in any inquiry. These doctrines, Professor Barnes argues, cannot form a coherent philosophy, as indeed those who used to hold them seem to be beginning to realize, for their most recent efforts are directed towards modifying them. Whatever the outcome of these efforts the attack on traditional philosophy has petered out. Analysis pursued in any legitimate way involves at least "critical philosophy," as opposed to mere adherence to common sense, and "critical philosophy" when it gets to work requires a considerable injection of "speculative philosophy." Professor Barnes concludes with some remarks about the possibilities of speculative philosophy. The logical positivists started out with the avowed intention of closing all possibilities by silencing everybody except themselves. They have failed and in spite of themselves have opened possibilities. Their linguistic method, when freed of errors such as the "metaphysic of simple elements," is a useful contribution to thought.

This brings me to the only substantial criticism I have to make of Professor Barnes's book, and that is of omission. He says nothing about Ogden and Richards's *Meaning of Meaning*. True, most of the ideas there probably derived from Wittgenstein. But few have read the *Tractatus Logico-Philosophicus* and fewer still have understood it; very many have read the *Meaning of Meaning* and its influence has spread far outside philosophical circles. In particular, the dichotomy of language into descriptive and emotive has passed into common speech, with disastrous consequences. More than any other recent work it has given an odour of intellectual respectability to vulgar errors and false valuations favoured by the man in the street, or, perhaps one ought to say, the man in Fleet Street.

A. D. RITCHIE.

Philosophy of the Arts. By M. Weitz. (Harvard University Press and London, G. Cumberlege. Pp. 240. $4.00.)

This is a rather hard book to read, mainly owing to a number of nice, if necessary, distinctions indicated by phrases either new or with new meanings, perhaps private to the author or perhaps esoteric terms of art. "Every constituent in a work of art—line, colour, rhythm, melody, gesture, etc.—not merely the subject (which represents the object) is representational in an expressive sense." This seems to have been more naturally phrased by Bosanquet and Croce. Then we have to distinguish the "total sign" from its elements or species:—

(1) The iconic sign (e.g. "the subject—i.e. lines and colours that represent the actual mountain. Semantically the subject is an iconic sign of its object").

(2) The transparent symbol, i.e. one naturally or universally recognized, as the colour red is of warmth.

(3) The opaque symbol, i.e. a conventional one, as a dove of peace.

(4) Indices; but it is not clear if these are identical with symbols or distinct. Unfortunately, though naturally, it has not seemed possible to keep to these rather arbitrary definitions with complete consistency.

The preface states the method of the book as an attempt not to "treat the arts from above" by considering the general nature of our aesthetic experience, but to discuss particular contemporary controversies in "typical Cambridge analytic fashion" even if the "answers do not all stand or fall together." But a *caveat* is entered against undue timidity of "speculative suggestion or synthesis."

The merits and defects of such a method are obvious. Some of its presuppositions might be modified if it were first agreed whether the term aesthetic experience is to include that of nature; others if it were agreed whether such experiences, which are admittedly modified by the spectators' racial, sexual, temperamental and cultural differences, are to be considered, when they so differ, as aesthetically of equal validity provided they are aesthetically pure and vivid. Further, there is a disconcerting tendency to oscillate between somewhat *jejune* analysis and somewhat rhetorical metaphor, like that of "the succulent character of man's emotional *Existencz*," or "the sultry, heavy, semi-conscious character of Prufrock's reality."

The main conclusions are: (1) the resolution of the subject—form controversy by emphasis on the "organic" nature of works of art, in which (or we will not so call them) every element changes its nature according to the context where it occurs; and (2) the consequence that so-called "ideas" or emotions can gain aesthetic value by embodiment in "significant forms," which in turn gain value by signifying them. There are, however, other interesting points made, such as the contemplative and expressive nature of aesthetic experience. All of these, I think, have been anticipated, if not so closely argued, by Croce.

E. F. Carritt.

Albert Einstein; Philosopher—Scientist. edited by Paul Arthur Schilpp. Pp. xvi +781. The Library of Living Philosophers, Inc., Vol. vii in The Library of Living Philosophers. Price 8.50 dollars.

"I am told that Adolf Harnack once said, in the conference-room of the University of Berlin: 'People complain that our generation has no philosophers. Quite unjustly: it is merely that today's philosophers sit in another department, their names are Planck and Einstein.'" These opening words of Arnold Sommer-

feld's contribution to this latest volume in *The Library of Living Philosophers* remind us that, in fact, there is nothing surprising or paradoxical for a man who is primarily regarded as a professional physicist to be honoured in this way. Although in our universities we tend to regard philosophy as an arts subject—a tendency which is encouraged by the philosophers themselves who often concentrate on the "linguistic" problems (in the old days these mainly concerned Greek and nowadays the logical syntax of language)—nevertheless, we find that in the past many of the great philosophers were either actually men of science or, at least, well informed in the scientific knowledge of their day. Aristotle and Kant, to take but two of the greatest names, were essentially philosopher-scientists. On the other hand, if we turn to the theoretical physicists and study their writings, we find time and again that considerations which can only be described as "philosophical" prompted their questions and guided them in seeking answers.

Although there is therefore no need to express surprise on the publication of the present volume, we certainly ought to congratulate the publishers on their imagination and enterprise. Expensive though the book may be, it is one which will amply repay the purchaser; and it is to be hoped that in one way or another it will be made readily available to students. The production is excellent, the printing clear and readable, and there are two excellent photographs of Einstein and a facsimile page of his handwriting. The volume concludes with a comprehensive bibliography of all his writings up to 1949. The only serious criticism which I have to make of the volume as a whole is that the translations often fail to do justice to the original essays which merit more distinguished language for their adequate expression in our tongue.

The plan of the book is one with which students of previous volumes in this series will be familiar. Einstein himself opens the discussion with autobiographical notes. A number of authors, in this case twenty-five, write appreciations and critiques of various aspects of Einstein's work and ideas. Then Einstein replies, and the volume concludes with bibliography and index.

Without question, the most valuable of the essays is Einstein's autobiography. In comparison, his concluding essay tends in places to be disappointing. For example, Milne's and Dingle's contributions are dismissed by him with all-too-brief comments, such as "concerning Milne's ingenious reflections I can only say that I find their theoretical basis too narrow." One had hoped that here at last was an opportunity to hear the considered views of the original architect of modern relativistic physics on the most recent modifications suggested by other acute thinkers to this vast edifice. Instead, apart from an extremely cogent rejection of Lemaître's argument in favour of the so-called "cosmological constant," Einstein has comparatively little to say on these questions.

Of the two great fields in which outstanding advances have been made since Einstein's reputation was established as the leading theoretical physicist of the century, namely physical cosmology and quantum mechanics, it is to the latter rather than to the former that his summing-up at the end of this volume is mainly directed. If I may be allowed to venture a rash prophecy, I would say that, although Einstein is the supreme master of the physics of yesterday and his critics—the "orthodox" quantum experts, represented here by Bohr, Born, Pauli, Heitler, etc.—are the masters of the physics of today, the theoretical cosmologists—Eddington, Milne, etc.—are the *forerunners* of the masters of the physics of tomorrow. If so, then not only Einstein's own views but also his choice of critics whose views he must submit to detailed scrutiny will equally be seen in time to "date" his approach to natural philosophy.

The absorbing autobiographical notes will form the ultimate indispensable

reference for all serious students of the evolution of Einstein's thought, and we find in them the essence of his whole philosophical attitude. Referring to Planck's pioneer introduction of the quantum concept in 1900, he writes (p. 37): "The history of this event is all the more remarkable because, at least in its first phase, it was not in any way influenced by any surprising discoveries of an experimental nature." Later, commenting on the attitude of Ostwald and Mach to atomic theory, he argues convincingly (p. 49) that their attitude was based on a philosophical prejudice—"the faith that facts by themselves can and should yield scientific knowledge without conceptual construction." But Einstein's own attitude, although I believe it to be far more profound, is also "prejudiced" as he, in effect, admits when he tells us (p. 63) that he believes that "nature is so constituted that it is possible logically to lay down such strongly determined laws that within these laws only rationally completely determined constants occur." The same "prejudice" is revealed in passages quoted by Niels Bohr in his illuminating account of his discussions with Einstein on epistemological problems in modern quantum physics, in particular the quotation from Einstein's 1936 article on *Physics and Reality* where he says of the modern quantum-mechanical description of nature:—"To believe this is logically possible without contradiction; but it is so very contrary to my scientific instinct that I cannot forgo the search for a more complete conception."

Einstein believes that all our thinking is a free play with concepts, and his career has been remarkable in that he has steadily become more and more "mathematical" as he has grown older, so that beginning as a pure physicist he has become almost a pure mathematician—comparable, in some respects, with Lagrange. He admits that as a young man, when many of his greatest discoveries were made, it was not then clear to him that "the approach to a more profound knowledge of physics is tied up with the most intricate mathematical methods." An acute critic, L. Rosenfeld—unfortunately not represented in the present volume—has called Einstein, disparagingly, an "idealist," and has objected that the new ideas of physics, although creations of the mind, are not *free* creations. The argument between "mathematical idealist" and "material realist," as represented by Einstein and Rosenfeld (or Bohr) respectively, may ultimately be settled when we realize the full implications of the view which owes its ultimate origin to Kant's pioneer investigations in the theory of knowledge, namely that scientific theories do not present us with mirror images of the physical world but rather with programmes and with methods or tools for its investigation by the human mind. G. J. WHITROW.

Language and Philosophy. By MAX BLACK. Cornell University Press. (London: Geoffrey Cumberlege. 1949. Pp. 264. Price 28s.)

Professor Black is an able, honest and lucid writer who touches no subject which he does not illuminate. This collection of some of his papers on logical topics is very welcome. Three of them will probably be familiar to English readers: "The Semantic Definition of Truth" (*Analysis* 1948); "Russell's Philosophy of Language" (*The Philosophy of Bertrand Russell*); and "Wittgenstein's *Tractatus*" (*The Proceedings of the Aristotelian Society* 1938–39). The remainder have appeared in American periodicals or are here published in full for the first time.

The first essay, "Linguistic Method in Philosophy," illustrates the thesis that philosophical scepticism is often the by-product of distortions of the ordinary meanings of words, by means of a number of examples of which the

treatment is rather too cursory to be wholly persuasive. The second gives an interesting analysis of the vagueness of an expression in terms of the differing values of the ratio between the applications of that expression and the occasions of applying or withholding it, for different specific situations. This provides a basis for discriminating degrees of vagueness. Traditional logical laws are then presented as special, limiting cases of more general laws which take into account the vagueness of descriptive predicates. The third essay ("The Justification of Induction") is a detailed application of the linguistic method recommended in the first. Professor Black shows, by arguments of a kind now fairly familiar and, to my mind, final, that the demand for a justification of induction *in general* (as opposed, say, to some specific sampling procedure) is *senseless*. In the fourth essay, on the semantic definition of truth, Black shows how the requirement that "true" shall be a meta-linguistic predicate of *sentences* leads to difficulties in generalizing, for natural languages, a definition of truth in the spirit of the semantic theory; and how these difficulties can be simply met, without permitting the reappearance of the semantic paradoxes, by dropping that requirement. He doubts whether this procedure would count as a solution to the "philosophical problem of truth," which he attributes to unspecified "confusions of thought."

The next two essays—on "Russell's Philosophy of Language" and "Wittgenstein's *Tractatus*" have, as their common theme, scepticism about the "structural" relationship between language and the world which apparently was for Russell, at one time, an ideal, for Wittgenstein, at one time, a fact. Both essays contain other interesting features: the first, the derivation of a contradiction from one of Russell's formulations of the Theory of Types, a reformulation which escapes it, and some account of the difficulties of systematically applying the notion of logical types to ordinary language; the second, some all too brief concluding remarks about the meaning of "language" and "linguistic rule."

There follow three essays—"The Semiotic of Charles Morris," "Ogden and Richards' Theory of Interpretation" and "Questions about Emotive Meaning" —all concerned with forms of the causal theory of meaning. A sentence from the third essay may be allowed to epitomize the discussion: "Perhaps the greatest danger in this tangle of difficulties is that of being content with a technical terminology which fosters the illusion that problems have been solved" (p. 206). The book concludes with a criticism of "Korzybski's General Semantics"—a subject which, to judge from the quotations from *Science and Sanity*, was hardly worth Professor Black's attention.

This book combines the greatest critical fairness with a patient and persistent defence of good sense and lucidity. P. F. Strawson.

Pascal's Pensées. With an English translation, brief notes and introduction. By H. F. Stewart, D.D. (London: Routledge and Kegan Paul. 1950. Pp. xxiv + 543. Price 21s. net.)

The late Dr. H. F. Stewart is well known as a devoted student of Pascal. In his Hulsean Lectures (*The Holiness of Pascal*, 1915), he hinted, and in an article printed in 1921 he argued in detail, that the most satisfactory way to arrange the *Pensées* was to order the items in the form of the defence of Christianity which Pascal had intended to write, and in doing this to make use of the account of Pascal's lecture on this theme reported in Filleau de la Chaise's *Discours sur les Pensées de M. Pascal* (1672). Accordingly, in 1942, Dr. Stewart published his suggested reconstruction with the title of ***Pascal's***

Apology for Religion. Many of the fragments, however, cannot be accommodated in this way, and in 1945 Dr. Stewart collected and edited these in a volume with the title of *The Heart of Pascal*. The edition of the *Pensées* under review collects in one volume what is, with a few changes affecting the numbering, the text of the two earlier collections along with Dr. Stewart's translation on opposite pages. There is a brief introduction, twenty-seven pages of notes, and an index.

The main matters for consideration are the value of Dr. Stewart's arrangement, the usefulness of his notes, and the adequacy of his translation. As to the first, it may well be doubted whether yet another arrangement of this fascinating work is likely to be worth the additional trouble in identifying references that it must give rise to. Dr. Stewart is very generous to his predecessors, and especially to Brunschwicg, but I cannot see that he faces the latter's difficulty that Pascal must have written a good many of the *Pensées* after the lecture that Filleau de la Chaise reports, and could have changed his conception of the whole enterprise. Those who wish to consider for themselves the value of the clue that Dr. Stewart makes use of must refer to Pascal's *Apology for Religion* where Filleau de la Chaise's version of Pascal's lecture is printed in an appendix.

The notes are brief, and consist mainly of references to writings that influenced Pascal or were quoted by him. They do little to elucidate or illuminate Pascal's thought as do those of Brunschwicg. Dr. Stewart's death unfortunately prevented him from seeing them through the press, and the result is that there are many inaccuracies and misprints. Thus, Galileo, who died in 1642, is described as having "brought to perfection the astral telescope" in 1660, Pascal's friend Miton appears as "Mitton," M. de Saci as "M. de Sace," the title of Descartes' *Discours de la Méthode* is wrongly given, and there are other slips which a conscientious regard for Dr. Stewart's memory would have rectified. Since there is no system linking Dr. Stewart's numbering of the fragments with that of previous editors, the reader is thrown back on the index, but this is not as useful as it should be. For example, it refers neither to "geometry" nor to "wager," surely subjects important enough in Pascal's thought to merit inclusion.

To translate Pascal's vivid and moving sentences is a formidable task which calls for a poet's appreciation of the rhythms as well as for a philosopher's grasp of the arguments. Dr. Stewart's translation is on the whole adequate, and is useful to those who need help in construing the French. He gives an admirable turn to some of the more famous passages, but I feel that while to translate "l'esprit de géométrie" by "the mathematical mind" will do, to translate "l'esprit de finesse" by "the nimbly discerning mind" will not. No doubt Dr. Stewart was thinking of the sense of "discern" that occurs in the expression "man of discernment." But to introduce the word "nimbly" (and later on "swiftly") destroys, it seems to me, the notion of subtle judgment or intellectual sensitivity involved in the word "finesse."

H. B. Acton.

The Legacy of Maimonides. By Ben Zion Bokser. (Philosophical Library, New York. Pp. x + 128. Price $3.75.)

Dr. Bokser has produced what could fairly be termed a "popular" exposition of Maimonides's philosophy. He includes a few pages of biographical detail in order to place Maimonides's thought in its historical context, and a few pages about the contemporary form of Maimonides's problem—the "con-

flict" of science and religion. But he makes no attempt to assess the extent to which Maimonides achieved an adequate and self-consistent synthesis of Aristotelian philosophy and traditional Judaism. And although his notes sometimes contain discussions which reveal the width of his reading the text was obviously not written with the freedom from oversimplification and imprecise phraseology which would justify criticism of the book as a work of scholarship. However, Moses Maimonides is a figure of some importance in the mainstream of European philosophy, and Dr. Bokser has filled a gap in English literature about him by producing a short, popular exposition. It is a pity that the price is at least twice as high as is now normal for books of such a type on this side of the Atlantic. JONATHAN COHEN.

The Essentials of Theism. By D. J. B. HAWKINS. (Sheed & Ward. Price 7s. 6d.)

Ever since the days of Kant, attempts to prove the existence of God have become increasingly suspect to professional philosophers. Dr. Hawkins is aware of this fact—indeed there is little in the history of philosophy both ancient and modern of which he is not aware—but for all that he is not discouraged. As he puts it himself: ". . . . a philosophical doctrine of God which treats Kant without servility is not on that account to be dismissed as a piece of archaeology," and although the area about which many philosophers bothered themselves lately was shrinking, it is well for philosophy that men like Dr. Hawkins exist. Because, unless philosophy concerns itself with large topics, there really is little purpose in pursuing it.

There is nothing very new or very striking in this little book except for the matter-of-fact way in which it goes about its business and the pleasant irony of its style ("primitive man" as he is so often presented to us "with a half-awakened intelligence and an infinite capacity for jumping to conclusions"; "no philosophy is less credible than Hume's, but the example of his intellectual suicide continues to exercise a fatal attraction upon many contemporary minds"). But Dr. Hawkins is a man who not only knows his St. Thomas but is also versed in Plato and the moderns" and only the most rabid anti-metaphysician will refuse the tribute of his respect. The work is competent and business-like and those who want to know what theistic philosophers are like may well take this book as a model. T. CORBISHLEY, S.J.

The Philosophy of Religion. By W. H. MORGAN, Ph.D., S.T.D. (Philosophical Library. New York. 1950. Pp. xv + 413. Price $6.)

Dr. Morgan describes philosophy as the search for ultimate principles, and gives what he calls a comprehensive definition of religion as "the realization that we are essential and contributory participants in ultimate reality, in nature and humanity." Whether is possible to define religion has been disputed, but if it is, this definition is far from satisfactory. It can apply only to a philosophical conception of religion, not to elementary or empirical forms, and refers only to belief, not to activity, nor to the social expression religion demands. We cannot help being participants in actuality, and even if the words ultimate reality be stressed, that reality need not be conceived in any religious sense. Dr. Morgan seems aware of this, and deals briefly with some features of primitive religion, in an endeavour to show that they imply his definition, but whilst all forms of religion postulate that there is a power in the world superior to man with which it may be possible for man to establish

relationship, that is far from the realization that man is a contributory partner in that relationship, in Dr. Morgan's sense of the term.

Dr. Morgan says something about the Greeks, but passes over the Middle Ages. The name of Aquinas is absent from the index. The strength of his exposition begins with Descartes. He says a little about Berkeley, much of Kant, by-passes Hegel, but gives due attention to T.H. Green. He has little to say of modern philosophy of religion. The "lay-out" of the book is arranged rather on methods of approaching the problem than on individual thinkers. After an introductory section, the three main divisions concern the problem of knowledge, ultimate reality as a causal and as an ethical principle. A final section deals with ultimate reality as related to human life and destiny.

The sub-title of the book "A consideration of the more profound aspects of religious thought" explains why it is not suited as a student's textbook, but for advanced students and teachers it has much to commend it. It is provocative often, saying in brief things which cannot be briefly said for example. "The soul of man was never created, it has always existed as a constituent part of ultimate reality," or "Imperfection is a necessary phase of the visible universe . . . God cannot help it. It belongs essentially to the fact of divine expression." But what is sincere is never entirely unsound and Dr. Morgan has made an intense and sincere attempt to probe the mysteries of being. Even those who will disagree most with his conclusions will admit that he provokes thought and that this book says things that are worth weighing alike in themselves and in thoughts that they will create in the reader's mind.

E. S. WATERHOUSE.

Religion and the Rise of Western Culture. By CHRISTOPHER DAWSON. (Sheed & Ward. Price 18s.)

In the second series of his Gifford Lectures, delivered at Edinburgh in 1948–49, Mr. Dawson continues to delevop the thesis that "religion is the dynamic element in culture" by analysing the forces that have gone to the building up of what we call Western civilization. Of the importance of the subject today no-one will have any doubt, and those who are familiar with the works of the author will admire once again the breath of learning and spiritual perceptiveness which have gone to the making of this latest production. It is much more a historian's book than a philosopher's, though any philosopher interested in the development of European thought will find this work a valuable and illuminating commentary on the background against which that thought developed, whilst the chapter on the Mediaeval School and University has passages of direct relevance. It is a period which has been notoriously neglected for one reason or another by most modern students of philosophy and now that we seem to have reached a situation which might well merit the condemnation of John of Salisbury—*dialectica exsanguis et sterilis*—we might have something to learnfrom the men who built up "a great structure of thought in which every aspect of knowledge is co-ordinated and subordinated to the divine science. . . ."

T. CORBISHLEY, S.J.

Science: Its Method and its Philosophy. By G. BURNISTON BROWN. (Allen & Unwin. Pp. 189. Price 15s.)

Writers on the philosophy of science seem destined for a peculiarly depressing fate: like prisoners of war escaping in an enemy plane, they are liable to be attacked by the one side for their real allegiance, and by the other for

their appearance. And so it is with the author of this book, who is Reader in Physics at University College, London. The physicists will disapprove of the philosophical appearance and I am afraid most philosophers will disapprove of the philosophy.

But though there may be some dispute over the philosophy, the book possesses two of the most elusive virtues: it is clearly written and it is interesting. There are several well-presented biographical sketches (John Stuart Mill, Newton, Whewell, Francis Bacon, and Aristotle) and good descriptions of a number of experiments, some historic and some novel. An enormous range of philosophical, logical, and scientific topics is touched upon, including ethics, the paradoxes of Zeno and Epeminides, freewill, evolution, induction, scholastic logic, perception, higher geometry, psychology, semantics, solipsism, and gravitation. The book seems most satisfactory in so far as it deals with the history of the philosophy of science and is a stimulus to further reading. But it attempts rather more than this: it ". . . attempts to give a solution of . . . problems, some of which have been the subject of argument by philosophers since the earliest times, . . . (approaching them) . . . in a way which . . . most scientists would accept if they thought about these matters" (pp. 7, 8). Further, the author hopes that his views "outline a basis for a satisfactory theory of knowledge" (p. 8). But he makes the following remark: "Philosophers, no doubt, would wish for a more detailed treatment, but such a treatment would be out of place in a book addressed to the general reader." That is, he claims to give the scientists' approach to difficult philosophical problems in a way that he thinks may not satisfy the philosophers, but will be appropriate to the layman. Now, successful business men may all drive Cadillacs and the makers may double their sales by advertising this fact, but if the engineers think them shoddy though flashy, wise men ignore the tycoons' tastes. One may be able to sell the public the kindergarten positivism of this book by claiming the support of scientists, but advertising technique is a poor substitute for good reasons and careful argument. The first sentence of this book begins: "The word *science* is derived from a Greek word meaning knowledge, but it has come to mean a method of obtaining knowledge . . . a general procedure . . . a special way of learning. . . ." I can find little support in the dictionary or in common usage for this claim: the usual meaning of "science" is close to the Greek original—"systematic or organized knowledge." Some later definitions are less satisfactory: "Free will *means* being conscious of being able to make a choice, and of this there can be no doubt. . . ." (p. 171). Determinists do not deny the existence of a "feeling of making a choice," yet they deny the reality of free will. The two things cannot have the same meaning. His most serious attempt at definition centres around the words "proposition" and "fact": "in the interests of clarity, also, several words such as . . . 'proposition' which have had more than one meaning during their history have had to be firmly pinned down and confined to one meaning throughout the book" (p. 7). He thinks it very important to define "fact": this word "has hardly ever been defined, and never, I believe, clearly defined. The use of this word without definition is the first step to confused thinking . . . (its definition) one might almost say, the first problem of philosophy" (p. 7). On page 38 we are given this definition, after being told that a proposition is a "sentence which asserts or denies something" (p. 37): "It is useful and convenient to have a special word for true propositions. These will be called facts." But he is not content with a definition: he hopes to achieve an analysis as well: "At first sight it may seem strange that a fact is a proposition. . . ." Since a proposition is a sentence, which consists of words, the definition implies that facts are strings of words. This seems an unsatisfactory solution to the "first

problem of philosophy." Facts and sentences are in some sense on different levels. "Napoleon I died at St. Helena" is a sentence. It is a fact *that* Napoleon I died at St. Helena. There are further complications: it turns out that this particular example is not a fact but a hypothesis since "it is a proposition that cannot be verified" (p. 40), whereas it is possible to verify "H. S. Truman is President of the United States" (p. 39). The "possibility of verification" is an awkward concept, as the author foresees: he thinks (p. 153) his "definition involves the assumption of the uniformity of Nature . . . *facts involve beliefs of this kind*" (my italics). To sum up the objections to these definitions, I think one might even persuade 'most scientists' (1) it is a fact and not a hypothesis that bombs were dropped on London during the last war, despite the past tense, (2) this fact can be stated using words from the sentence (1), but is not the same thing as the sentence, so facts are not sentences, (3) it does not depend on the uniformity of Nature.

The epistemological superstructure on these foundations is naturally of the arch-deceiver variety: ". . . it always comes as a shock to realize that chairs and tables and people . . . are inferences which we make unconsciously . . ." (p. 34). A most appropriate comment on this view is made by the author himself elsewhere (p. 181). "Has not Lord Russell truly remarked that surprise is the mark of error?" On the heliocentric theory he comments ". . . the proposition that the Earth moves cannot be proved . . . and it may well be that the Inquisition was right in rejecting it." There is no more question of the Inquisition being right than of the exponents of the binary number system being right: the choice is not between two alternatives, one right and the other wrong. The Inquisition were quite mistaken in believing that it was.

I think the author too often fails to distinguish between knowing how and knowing that: more precisely, between knowing how and knowing how to tell how. It is assumed that the ability to describe scientific method correctly is a necessary concomitant of successful scientific activity: it is not even a necessary consequence. We are told that "Aristotle's immortality lies in this: that he was the first in recorded history to attempt to devise a method for arriving at secure and reliable knowledge based on observation" (p. 44). In fact, many methods for arriving at such knowledge had been devised (by the early astronomers, for example), and the details given. Aristotle's originality was only in the field of philosophical talk about scientific method. Later we are told "It is Bacon's great merit that he initiated a way of thinking that we all now accept" (p. 68). Now Bacon may have been the first to say something about scientific method with which we all now agree, but this is not to initiate a way of thinking. Scientific method had long embodied in practice the principles first enunciated by Bacon.

There are many other points on which one would like to disagree with the scientific attitude (as seen by the author of this book). For example, ". . . a sleeping person is not completely unconscious, otherwise, of course, it would be impossible to awaken him. . . ."(p. 169). On page 170 he says "The fact that it is possible to deny the existence of other people, as the Solipsists do, shows that their existence is not a fact but a hypothesis." This sentence is internally inconsistent: if the possibility of denial turns facts into hypotheses, the second word of the sentence is wrongly applied. On page 173 he says: "The subject of ethics is greatly confused by the fact that no satisfactory definitions of the words 'good' and 'bad' have ever been given. Scientific method cannot be used to solve problems which are not clearly expressed." On the next page, however, we hear that "scientific method is indispensable in ethical considerations." I think this last sentence gives us the key to the book. In a sense scientific method is indispensable everywhere; in the kitchen,

the Houses of Parliament, ethics, and laboratories. And in a sense it is the exclusive province of scientists. Too many people want to have it both ways: they think it is the scientists that are indispensable everywhere because only they have the scientific method. I see absolutely no evidence to support the view that scientists, however good in their own field, are any better politicians, husbands, industrial designers, or moralists than those whose apprenticeship was served in a non-scientific field. In fact, I see no evidence to support the view that scientists are any better at writing about scientific method than the poor, muddled, philosophers. MICHAEL SCRIVEN.

Essay in Physics. VISCOUNT SAMUEL (With a letter from Dr. Albert Einstein.) (Basil Blackwell, Oxford, 1951, pp. 154. Price 7s. 6d.)

In his Foreword to this Essay the author confesses that he is not himself a physicist. It would be all too easy for the professional physicist to decline seriously to consider an analysis of his own subject by one who starts with such a disclaimer. But the reactions to the current situation in physics of so eminent a mind as Lord Samuel's deserve respectful attention. Professor Einstein for one shows that he thinks so by his carefully considered letter which is printed at the end of the book.

Even physicists themselves are ready to admit that there is something rather fantastic about the current formulation of the foundations of their subject. It is well for them to be given an opportunity to see it through the eyes of someone like Lord Samuel. They are then made to realize how inadequately its concepts have been rendered comprehensible to the layman and to learn what are the aspects upon which the layman chiefly seeks enlightenment.

Lord Samuel's first chapter on "Nature and Mathematics" is a critical commentary upon a variety of concepts: the "physically real," "space-time," "explanation," "chance" and statistics. Broadly speaking, he aims to distinguish between "fictional abstractions" and the "physically real." However, he does not sufficiently recognize that what he regards as real is not immediately given, that the things which he terms physically real are in fact *constructs* that the mind sets in correspondence with *sensations* or *experience*. This point is fully and vividly dealt with by Professor Einstein in the published letter. It seems to the reviewer to underlie all Lord Samuel's difficulties. For it means (*a*) that the distinction he wishes to make is largely illusory, (*b*) that the constructs which constitute physical reality are not necessarily either uniquely or finally determined, (*c*) that there is no physics without physical *theory*.

We may consider a particular topic in somewhat more detail. Lord Samuel devotes special attention to the Uncertainty Principle which he is apparently unwilling to accept. The consequences of this principle to which he objects is that the result of any particular observation concerning, say, an electron cannot be completely predicted. Any possible predictions have to be stated in terms of probabilities.

The status of the principle must be made clear. The physical theory concerned deals with the constructs "electron," "photon" and so on, as well as those like "clock" and "measuring rod." Now a *prediction* in physics means that we make certain observations about a system and use the results of those observations in order to predict (i.e. to "calculate" or "infer") the results of other observations. But the theory is such that the act of observing the system must disturb the system in a manner that is not completely knowable. This is a logical consequence of the existence in the theory of the *quantum of*

action, i.e. of Planck's constant h which is not zero. Therefore we are called upon to make a prediction concerning a system whose condition was to some extent unknown directly it had been observed (and, of course, had it not already been observed we could make no prediction at all). So we cannot say exactly what will be found on some other occasion of observing it.

When Lord Samuel says that "most, though not all physicists have accepted those deductions," he must be taken to mean that most physicists believe that the constructs "electron," "photon," etc., stand in more satisfactory correspondence with experience than any others that have been proposed and that they accept the logical correctness of the deduction of the Uncertainty Principle and its consequences.

It cannot be asserted that it is impossible to invent some other set of constructs which can be set in satisfactory correspondence with experience and which would not lead to an uncertainty principle. However, no physicist has formulated such constructs and probably no physicist has any inkling as to how it could be done. All physicists would agree that, were it possible, it would require a complete recasting of all our basic constructs, probably pre-eminently that of "time." Professor Einstein, possibly alone of modern physicists, definitely holds that this reconstruction *is* possible, though even he has found no way of approaching it.

Though he quotes Professor Einstein in support of his view, Lord Samuel's attitude to the whole matter is fundamentally different. So far as the reviewer can follow his argument, he appears to hold that chairs, tables, atoms, electrons, electromagnetic fields, and so on are "real" independently of our experience. Also he apparently believes that the events in which they participate are real in the same way and that a "cause" exists for every event. And, though he puts "space" and "time" in the category of "fictional abstractions" he actually treats them also as real in his sense since his notion of cause implies a sequence in time and, since he expressly disallows action at a distance, he pre-supposes the existence of distance. In short, he believes in a universe which is given and which produces our experience.

This has also been the traditional view in experimental physics. But most natural philosophers hold that it is experience that is given and we construct the universe from it. The constructs are of course termed "real" because nothing else is recognized to which the term may be attached.

A full examination of this point of view has recently been given by H. Margenau in his book *The Nature of Physical Reality* (New York 1950). Though it leaves much that is still open to discussion, it does seem to the present reviewer to underlie all the great fundamental advances which have been made by modern physics.

Lord Samuel's view leads him to hold that physical knowledge can be got from speculative philosophy. As he expresses it, this is in direct contradiction with current ideas, as indeed he appears to be ready to admit. The objection to his procedure is that he is prepared to introduce elements, for example "causes" and later "quiescent energy," which he is unable to put in correspondence with experience.

One may remark in passing that this last consideration is relevant also to Lord Samuel's "Postscript" which deals briefly with the problem of Matter and Mind. With all respect for his deep learning in such questions, one considers that the ideas advocated in this review do go some way in disposing of his problems. For they regard what is "given" not as matter and mind but, as we have said, merely experience. Experience constitutes a single aggregate, and is not itself either material or non-material. Lord Samuel writes of a "duality in nature," but one conceives that the duality is largely an arbitrary

one between the sets of constructs which we place in correspondence with experience and that it has no meaning to say that there is a duality in experience itself.

To return to the main development of Lord Samuel's book, in his second chapter he states what in his opinion are the "Problems outstanding" in present-day physics—those of the nature of electromagnetic radiation, of gravitation, of motion, and of waves and particles. There is apparently not much of physics omitted from this list! And, of course, there must be a great deal yet to be discovered about all these topics. But the problems as Lord Samuel states them appear to be largely created by his view of physical reality: indeed, his concept of the "nature of" these constructs scarcely exists for physics.

The rest of his Essay, forming its main part, is the exposition of his hypothesis of a "Two-State Ether." He wishes to suggest "that energy exists in two states—quiescent and active, and passes easily from one to the other.

"Quiescent energy is conceived as a continuum, and as the sole physical constituent of the universe. All material events are to be accounted for as cases of the activation of quiescent energy."

Here one can only point out that, viewing the subject now as ordinary physical theory, physics has already achieved something like what Lord Samuel wants his hypothesis to achieve. For quantum theory, in its field of application, has to a large extent obliterated the boundaries between matter and space. And relativity theory, in its field, has gone even further in the same direction. For it does away with the separate existences of space-time and of matter. This point is clearly stated in Professor Einstein's contribution, though, as he says, physicists appear not to have fully realized it. Also there is yet another way in which relativity has done away with action at a distance, a concept to which Lord Samuel particularly objects and which he himself is concerned to remove. In relativity theory, both gravitation and radiative effects are propagated with the speed of light which means that they operate only over *zero* intervals in space-time. That is to say, from a four-dimensional standpoint, there *is* no action at a distance in current physics. Possibly this, too, is not commonly realized.

This *Essay in Physics* is a forcible demonstration of the need that exists for a clear and accessible statement of the basic structure of current physics. Lord Samuel's attractive presentation of his views invites a reply in the form of such a statement. If someone accepts the invitation, the Essay will have served a worthy purpose and one which its distinguished author, one feels convinced, would be the first to welcome.

W. H. McCrea.

Form and Content in Logic.—An Inaugural Lecture by G. H. von Wright. (Cambridge University Press. 1949. Price 1s. 6d.)

In the logic of propositions, a tautology may be defined as a truth-function of n propositions which has the truth-value "true" for every possible combination of truth-values in the n propositions; the number of such possible combinations being determined, independently of the form or content of the n propositions, by the Principles of Contradiction and of Excluded Middle. In terms of the concept of a tautology, so defined, Professor von Wright states the theme of his inaugural lecture as follows:

"The concept of a tautology works very well for the purpose of clarifying the idea of logical truth or 'independence of content' in propositional logic, i.e. in that province of logical truth where the variable parts of the expressions

which we study are sentences. Can it be applied for a similar purpose in those provinces of logical truth where the variables mean properties or relations?

"This question could be answered affirmatively, if it could be shown that the logical constants which occur in expressions about properties and relations can be somehow 'eliminated' and 'replaced' by logical constants of propositional logic."

Professor von Wright suggests two methods by which this aim might be achieved. Of these he considers the second more satisfactory than the first. The methods are illustrated throughout by two examples, one from functional, and the other from relational, logic. The examples are, respectively, of the forms:

$$(1)\ [(x)\ (fx \supset gx)\ .\ (\exists x)\ (fx\ .\ hx)] \supset (\exists x)\ (gx\ .\ hx)$$

$$(2)\ (\exists x)\ (\exists y)\ f\ (x, y) \supset (\exists x)\ (\exists y)\ \text{f-converse}\ (x, y)$$

The first method makes use of the concept of a "tautology in all possible finite worlds." It may be illustrated for (1) as follows. Suppose there are only two individuals, *a* and *b*, in the world, of the appropriate type for the functions involved. Then (1) could be rewritten as

$$(1a)\ [fa \supset ga\ .\ fb \supset gb\ .\ (fa\ .\ ha) \vee (fb\ .\ hb)] \supset [(ga\ .\ ha) \vee (gb\ .\ hb)]$$

which is a truth-functional tautology of six propositions. A corresponding result would be obtained for any number, *n*, of individuals, i.e. for any possible finite world. Professor von Wright remarks that a similar procedure could be followed for the elimination of non-propositional constants (i.e. "converse") in the case of (2); but he does not indicate how this should be done, nor is it obvious. The question is next considered of whether "the concept of a tautology in all possible worlds gives the proper meaning to the idea of logical truth" in the Logic of Properties and Relations; but in this suggestion Professor von Wright finds two difficulties. The first is that the number of possible worlds is unlimited and, hence, that though truth-tables can be used to decide whether an expression is a tautology in any given world of *n* individuals, they cannot be used to decide whether it is a tautology in *all* possible worlds; nor is there any known alternative general method of proving this. The second difficulty is that the criterion suggested, though a necessary, is not a sufficient, condition of logical truth; for it is satisfied by arithmetical propositions which are false. And to amend the criterion by an express provision against this possibility is "to make the idea of logical truth dependent upon the idea of truth about numbers," for which there is no general decision-procedure.

It seems to me that Professor von Wright's first "difficulty" conceals a more fundamental objection, if not to his suggested procedure, at least to his description of its purpose as the "clarification" of the idea of logical truth in domains other than those of propositional logic by the use of the concept of a tautology. The transformation of (1) into (1*a*), under the condition that *a* and *b* are the only individuals of the appropriate type, is a valid transformation. But its validity depends on the logical truth of expressions which cannot themselves be regarded as expressing "tautologies" in the sense in which this word is used in propositional logic. Suppose we write the above condition in the form:

$$(x)\ [(fx \vee \sim fx) \supset (x = a \vee x = b)].$$

Then the fact that the transformation is valid is the same as the fact that

$$(x)\ [(fx \vee \sim fx) \supset (x = a \vee x = b)] \equiv [(x)\ (fx) \equiv (fa\ .\ fb)]$$

expresses a logical truth. But it is not a tautology in the limited sense intended. Or, if this way of putting the matter is unacceptable, we may say, more simply, that the legitimacy of such transformations presupposes the logical truth of "(x) (fx) ⊃ fx"; which cannot similarly be exhibited as a tautology without presupposing its own logical truth. Generally, it seems that the constants which Professor von Wright seeks to eliminate can be eliminated only by an exertion of their own logical powers. And this exertion is not sanctioned either by the logical truth of some expression expressing a tautology or by the principles which Professor von Wright mentions on pages 15–16 as being "basic in relation to the concept of a truth-function and the conception of truth-tables," viz. the principles (i) that every proposition has a truth-value (is true or false) and (ii) that no proposition has more than one truth-value (is not true *and* false). The legitimacy of the procedures used in the "reduction" of logical truths from domains other than the propositional to tautologies of *n* propositions must always involve logical truths of the kind which Professor von Wright considers to be in need of clarification. Professor von Wright cannot have overlooked this fact. But it means that the programme of "clarification" appears, after all, as the more modest one of exhibiting, in a fairly novel way, the familiar formal links between logic's propositional capital and its functional and relational provinces.

This belief is confirmed by an examination of Professor von Wright's second suggested procedure. The procedure may be illustrated for (1) as follows. First, a set of eight conditions is defined which are collectively exhaustive (any individual satisfies one of them), mutually exclusive (no individual satisfies more than one) and independently satisfiable. They may be represented by the functions: "$f\hat{x} \,.\, g\hat{x} \,.\, h\hat{x}$," "$f\hat{x} \,.\, g\hat{x} \,.\, \sim h\hat{x}$," "$f\hat{x} \,.\, \sim g\hat{x} \,.\, h\hat{x}$," "$f\hat{x} \,.\, \sim g\hat{x} \,.\, \sim h\hat{x}$," "$\sim f\hat{x} \,.\, g\hat{x} \,.\, h\hat{x}$," "$\sim f\hat{x} \,.\, g\hat{x} \,.\, \sim h\hat{x}$," "$\sim f\hat{x} \,.\, \sim g\hat{x} \,.\, h\hat{x}$," "$\sim f\hat{x} \,.\, \sim g\hat{x} \,.\, \sim h\hat{x}$." Corresponding to these are eight existence-propositions, each to the effect that one of these eight conditions is satisfied (i.e. "$(\exists x)\ (fx \,.\, gx \,.\, hx)$," "$(\exists x)\ (fx \,.\, gx \,.\, \sim hx)$," and so on). There are $2^8 = 256$ possible combinations of truth values of these eight propositions. If these are set out in a truth-table, and (1) is expanded by expressing each of its three parts as a truth-function of some pair of these eight propositions, the resulting expression is found to have the truth-value "true" for all 256 possible combinations. This may be put more briefly as follows. Expand (1) into

$$(1b)\quad \{\sim (\exists x)\ (fx \,.\, \sim gx \,.\, hx) \,.\, \sim (\exists x)\ (fx \,.\, \sim gx \sim hx) \,.\, [(\exists x)\ (fx \,.\, gx \,.\, hx) \vee (\exists x)\ (fx \,.\, \sim gx \,.\, hx)]\} \supset [(\exists x)\ (fx \,.\, gx \,.\, hx) \vee (\exists x)\ (\sim fx \,.\, gx \,.\, hx)].$$

The result is, obviously, a truth-functional tautology of four propositions.

The procedure for (2) is as follows. Taking Professor von Wright's example of "If somebody is teacher of somebody, then somebody is pupil of somebody" (2′); and representing "x is somebody's teacher" by "tx" and "x is somebody's pupil" by "px"; we may represent four collectively exhaustive and mutually exclusive conditions by the functions

$$\text{"}t\hat{x} \,.\, p\hat{x}\text{,"}\quad \text{"}t\hat{x} \,.\, \sim p\hat{x}\text{,"}\quad \text{"}\sim t\hat{x} \,.\, p\hat{x}\text{,"}\quad \text{"}\sim t\hat{x} \,.\, \sim p\hat{x}\text{."}$$

Corresponding to these four conditions are four existence-propositions, each to the effect that one of these four conditions is satisfied (i.e. "$(\exists x)\ (tx \,.\, px$,") "$(\exists x)\ (tx \,.\, \sim px)$" and so on). If we now conclude, as before, that there are $2^4 = 16$ possible combinations of truth-values of these four propositions; and expand (2′) into

$$(2'a)\ [(\exists x)\ (tx \,.\, px) \vee (\exists x)\ (tx \,.\, \sim px)] \supset [(\exists x)\ (tx \,.\, px) \vee (\exists x)\ (\sim tx \,.\, px)]$$

we shall *not* find that the result is a tautology of the propositions involved. If, however, "by a third procedure, *the nature of which is determined by the logical constants peculiar to relational logic,*"[1] we exclude certain combinations of truth-values of the four existence-propositions as impossible, we *shall* find that (2′*a*) expresses a tautology in the amended truth-tables. The four combinations excluded as impossible are those for which: "$(\exists x)\ (tx\ .\ px)$" has the truth-value "false"; "$(\exists x)\ (tx\ .\ \sim px)$" and "$(\exists x)\ (\sim tx\ .\ px)$" have opposite truth-values; and "$(\exists x)\ (\sim tx\ .\ \sim px)$" has either truth-value.

The procedures illustrated for (1) and (2′) are said to be adaptable to any expression in the Logic of Properties or Relations. Professor von Wright concludes that it would be premature to decide that the conception of a tautology of the existence-propositions resulting from the above procedures is a satisfactory criterion of logical truth in these domains. This decision, he says, would have to wait, first, upon proof that elimination of impossible combinations of truth-values was, where necessary, complete; and, second, upon proof that the criterion was satisfied in the world of numbers.

Now as regards (2′), it is obvious that the exclusion of four combinations of truth-values of existence-propositions as logically impossible is sanctioned by the logical truth of (2′) itself. In what sense is the result of this and the other procedures used to be regarded as a "clarification" of the idea of "logical truth" as predicated of (2′)? The procedure for (1) has not this patent circularity. But[2] its expansion into (1*b*) is sanctioned by the logical truth of such expressions as

$$\sim (\exists x)\ (fx) \supset [\sim (\exists x)\ (fx\ .\ gx)\ .\ \sim (\exists x)\ (fx\ .\ \sim gx)]$$

which cannot be similarly reduced to a tautology without its logical truth being presupposed.

Professor von Wright would feel happy about logical truth if the ground floor of logic were reserved for tautologies. Accordingly, whatever of logical truth is not of this kind is bundled upstairs to the level of "procedures."

Suppose one sought to clarify the notion of logical truth as applied, say, to (3) "If something is red, something is coloured" by proceeding as follows. There are three conditions, viz. being red and coloured, being coloured and not red, and being neither red nor coloured, of which it is true that everything must satisfy one, nothing can satisfy more than one, and the fact that one is satisfied or not is logically independent of the question of whether another is satisfied or not. There are three corresponding existence-propositions, each to the effect that one of these three conditions is satisfied, and eight possible combinations of truth-values of these three propositions. Expanding "If something is red, something is coloured" into "Something is red and coloured $\supset$ [(something is red and coloured) $\vee$ (something is coloured and not red)]," we obtain a tautology of two propositions. Is this procedure to count as a clarification of the notion of logical truth as applied to (3)?

Professor von Wright's thesis is presented with polish and elegance. He should not, however, say that a syllogism is an "if . . . then . . ." sentence. Nor should he assume, without question, that the A and I forms of Aristotelian logic are to be identified with negatively and positively existential forms of modern functional logic.

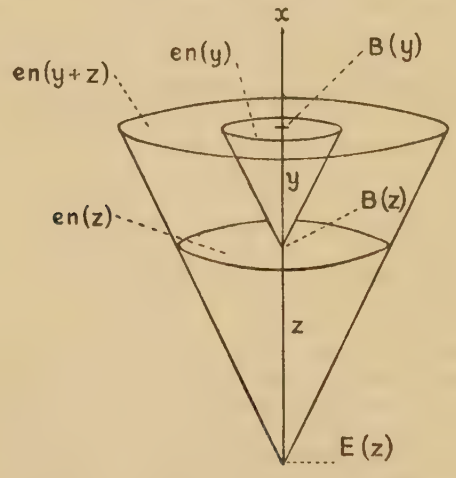
P. F. STRAWSON.

[1] My italics.
[2] As was pointed out to me by Mr. H. P. Grice.

Analytical Biology. By G. SOMMERHOFF. Geoffrey Cumberlege. (Oxford University Press. 1950. Price 17s. 6d.)

The primary aim of this book is to give an analysis of the notion of adaptation and of related biological concepts. The introductory chapter is devoted to a methodological discussion intended to show the need for such an analysis. In the second chapter a preliminary analysis of the notion of adaptation is given which culminates, in Chapter III, in an exposition of the notion of directive correlation with the help of differential equations. The remaining two chapters are devoted to applications of the results reached to various biological and other problems.

As the notion of directive correlation seems to be the key to the understanding of the author's thesis, perhaps the most useful service which a reviewer can render is an attempt to give some account of this rather complicated notion. I think this can be done most briefly and clearly in set-theoretical terms.



We must first decide what are to be regarded as individuals (as opposed to sets) in our system. These will be time-slices and time-stretches of organisms and environments of such time-stretches. By a time-slice of an organism is meant any momentary state of it, and by a time-stretch any continuous part of the whole time extent of the organism which has a beginning and an end in time. By the environment of any time-stretch z will be meant the object consisting of all the places which are neither before nor after the beginning of z in time (but excluding the beginning of z itself), and are such that (in the absence of intervening opaque bodies) a light wave can reach from each of them to some part of z. The spatial extent of this environment will therefore depend only on the time-length of z, the velocity of light being assumed to be constant. The above can best be understood with the help of the Minkowski cone diagram. Here the time-stretch z is represented by the line so marked. Its environment is represented by the base of the cone marked en(z). The beginning and end of z are marked B(z) and E(z) respectively. In what follows small letters will be used as variables (or dummy names) representing individuals of any of the above three kinds; capitals will be used to denote sets of such individuals, and Greek letters to denote sets of such sets.

Now suppose we have sets X and Z of time-slices of organisms and a set Y

of environments which are such that whenever the beginning of any time-stretch z is a member of X and the environment of z is a member of Y, then the end of z is a member of Z. Under such circumstances we can say that a causal law holds between X and Y on the one hand and Z on the other. We can say briefly that every member of X develops in a member of Y into a member of Z. As an abbreviation for this rather long sentence we can write "Dl(X,Y,Z)", because expressions of this kind will occur frequently in the sequel.

We are now in a position to expound (I hope not too inadequately) Mr. Sommerhoff's notion of directive correlation. In the diagram the line marked x represents a time-stretch of some organism, say a bird, and y and z represent shorter stretches of x, the end of y being identical with the beginning of z. The total stretch whose beginning is identical with the beginning of y and whose end is identical with the end of z, can be denoted by "y + z". Now suppose we have a set η (not necessarily finite) of sets of environments, its members being $E_1,E_2, \ldots$ (to one of which the environment of z belongs); and a set ρ (not necessarily finite) of sets of responses—$R_1,R_2 \ldots$ these being sets of time-slices which are the beginnings of responses of various kinds made by the bird (and to one of which the beginning of z belongs). We must further suppose that the sets comprising η and those belonging to ρ can be paired off in one-one fashion in such a way that, with reference to a fixed set G of time-stretches, all characterized by the fact that they end in the attainment of a certain goal, if we take any pair X,Y under this correlation (X being a member of η and Y a member of ρ) then we shall have Dl(X,Y,G). Let us suppose that the subscripts to the set designations have been so assigned that designations of sets coupled in the above way have the same subscript, then E_i,R_i will represent any such couple and if the beginning of z belongs to R_i and its environment to E_i then its end will belong to G. The environmental sets might be specified, for example, by reference to the various spatial positions relatively to the beginning of z of some food object, the correlated sets R_i would then be the beginnings of appropriate responses to food objects in such positions.

Now we turn to the longer time-stretch y + z containing a part y which is prior in time to z. The environment of y will be a part of the larger environment of y + z. Suppose we have a set A of time-slices of organisms to which the beginning of y belongs. A might be specified by saying that every member of it is a bird in a state of hunger. We must further suppose that we have a set β of sets $B_1,B_2, \ldots$ of environments such that to every set R_i of ρ there is a set B_i of β satisfying the condition $Dl(A,B_i,R_i)$. In our example each B_i will contain a time-slice of the food object. Thus if the environment of y is a member of B_i its end (and consequently the beginning of z) will be a member of R_i (since its beginning is a member of A). In other words members of A and B_i will together *initiate* responses of the kind R_i.

But this decides nothing regarding the environment of z, which depends on the environment of y + z of which the environment of y is only a part. We must therefore suppose that we have a set κ of sets $C_1,C_2, \ldots$ of environments such that each member of each member C_i of κ contains a part which is a member of B_i and is also such that if the environment of y + z is a member of C_i, then the environment of z will be a member of E_i. From these assumptions it will follow that we shall have $Dl(A,C_i,G)$. But if the environment of y + z does not belong to one of the sets composing κ, then a correlated pair E_i,R_i is not evoked and G is not reached. Now Mr. Sommerhoff applies the phrase "directive correlation with respect to G" to the set of correlated pairs of

sets from η and ρ. He calls the set G the focal condition and the set κ (or more correctly the set of sets each of which consists of the Boolean sum of a member of κ and A) the coenetic variable of the system, because its members are involved in eliciting *both* members of each of the correlated pairs E_i,R_i.

It also follows from the above that if we take *any* time-stretch z′ of x which is shorter in time than z but has the same end as z, then the beginning of z′ and the environment of z′ must *also* belong to sets R_i' and E_i' (say) respectively which are also directively correlated with respect to G. (They will, of course, not belong to the sets η and ρ but to some other sets η' and ρ'). Because if the beginning of z belongs to R_i and its environment to E_i then, since we are assuming the causal law $Dl(R_i,E_i,G)$, it follows that the end of z belongs to G, and since by hypothesis the end of z′ is identical with the end of z, it belongs to G, and if R_i' and E_i' were *not* directively correlated with respect to G the end of z′ would *not* be a member of G.

It will be noticed that if we let "C" denote the Boolean sum of *all* the sets in κ then we can also write the causal law Dl(A,C,G). But in this formulation the reference to all the possible routes by which a G may be reached is obliterated. The essential feature of directive correlation is that the set of correlated pairs from η and ρ has *many* members, so that the organism x is able to reach the goal in a *variety* of ways according to the variation in κ. The greater the number of sets in η with their correlated number in ρ, the better is x adapted to situations belonging to the type κ. This is the feature of such processes which was emphasized by Mr. Braithwaite in his address to the Aristotelian Society, 1946–47.

Mr. Sommerhoff has chosen to expound the notion of directive correlation in the language of physical science. But if the above brief exposition is at all adequate it seems to me that it can be expressed much more generally and need not be limited to the physical sciences. Provided we have causal laws and correlated sets no restrictions need be placed upon the ways in which the sets are specified.

On p. 69 Mr. Sommerhoff discusses the distinction between "being deliberately appropriate" and "being accidentally appropriate" with reference to responses. As he refers to some ancient remarks of mine on this question perhaps I may be permitted to say what I think about the question at the present time. It seems to me that there are two distinct language-systems involved in *both* of which the word "accidentally" occurs but with a *different sense* in each. When, in courts of law, or other situations of daily life, the question is debated whether some person did an act deliberately or accidentally, reference is made to that person's *intentions*. If the act was intended we call it deliberate, if not we call it accidental. The question of causal laws is not usually discussed in such contexts because this is not involved in the distinction. Acts of both kinds may exemplify causal laws. But when we are considering physical or biological problems from the scientific standpoint we are concerned with causal laws and the question of intention is not discussed. If therefore we use "accidentally" in scientific contexts we cannot be using it in the same sense in which it is used in a language-system in which "intention" occurs. If, for example, we ask whether the seizing of a food object by a bird was accidental or not, we are asking whether it exemplified a certain *type* of causal law, in which we are interested, or not. Here I should agree that Mr. Sommerhoff's analysis is very useful. We can say that the occurrence was accidental if it did *not* involve directive correlation, as opposed to some simpler type of causal law, such as gravitation (e.g. if the bird happened to have its beak open and the food dropped into it from above). In *both* uses of "accidental" we have an exhaustive disjunction between something being acci-

dental or not being accidental, but the same word "accidental" is being used differently in the two distinct situations.

Biologists on the whole are not much interested in methodological analysis, but it is hoped that they will make some effort to profit by the truly heroic intellectual efforts that Mr. Sommerhoff has exerted on their behalf in clarifying some of the central concepts of biology. From this point of view his use of the language of physics is good tactics on account of the prevailing glorification of physics among biologists. Whether it is good tactics from a long-range point of view no one can say, because no one can predict the future of either physics or biology. But exclusive adherence to one language-system or one system of hypotheses does have the disadvantage of limiting what you will observe. Because if what you observe is not in agreement with the expectations of your system you will be compelled to reject it by explaining it away if you are not prepared to revise your system. A system of hypotheses dogmatically adhered to presupposes that everything is "known in principle" and that the future has no surprises. But the history of science shows that from time to time there *have* been surprises and fortunately there have been men occasionally with wit enough to recognize them instead of being content to explain them away.

The last two chapters of Mr. Sommerhoff's book provide very many interesting topics for discussion, but any attempt even to enumerate them would carry us beyond the bounds of a review. J. H. Woodger.

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Proceedings of the Society for Psychical Research. Vol. XLIX, Part 180, April 1950. Pp. 131–153. 2s.

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ANDRIES H. D. MACLEOD. *Over de Verhouding van de speciale Relativiteitstheorie tot de Newtoniaansche Voorstellingen van ruimte en tijd.* Den Haag: "Humanitas." 1950. Pp. 37. No price stated.

ROLF EKMAN. *Vilhelm Ekelund ock Nietzsche.* Lund: C. W. K. Gleerup. 1950. Pp. 144. Swed. Kr. 9.

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February 1.	"The Function of Metaphysics"	Rev. F. C. Copleston, S.J.
February 8.	"The Nature of Logic"	W. C. Kneale, M.A.
February 15.	"Philosophy and Social Science"*	Professor H. B. Acton
February 22.	"A Defence of Teleological Ethics"*	R. B. Braithwaite, M.A.
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VOL. XXVI. NO. 96 JANUARY 1951

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